THE TAMILNADU Dr MGR MEDICAL UNIVERSITY, CHENNAI

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation titled **"Effectiveness of Various Oral Health Education Methods Among 12-15 Year Old School Going Children In Kanchipuram District, Tamil Nadu – A Community Intervention Trial"** is a bonafide and genuine research work carried out by me under the guidance of **Dr. M. Shiva Kumar, MDS,** Professor and Head of the Department, Department of Public Health Dentistry, Ragas Dental College and Hospital, Chennai.

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I hereby declare that this dissertation titled **"Effectiveness of Various Oral Health Education Methods Among 12-15 Year Old School Going Children In Kanchipuram District, Tamil Nadu– A Community Intervention Trial"** is a bonafide and genuine research work carried out by **Dr.J.E.Nijesh**, Post Graduate Student in the Dept of Public Health Dentistry, Ragas Dental College and Hospital, under my guidance in partial fulfillment for the requirement of the degree of **Master of Dental Surgery (Public Health Dentistry).**

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AND HEAD OF THE INSTITUTION

This is to certify that this dissertation titled **"Effectiveness of Various Oral Health Education Methods Among 12-15 Year Old School Going Children In Kanchipuram District, Tamil Nadu– A Community Intervention Trial"** is a bonafide and genuine research work done by **Dr. J.E.Nijesh** under the guidance of **Dr. M. Shiva Kumar MDS,** Professor and Head, Department of Public Health Dentistry, Ragas Dental College and Hospital, Chennai.

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ABSTRACT

INTRODUCTION: India, a developing country faces many challenges in rendering oral health needs. The majority of people reside in rural areas, of which more than 40% constitute children. These children cannot get dental care due to lack of availability, accessibility, affordability and acceptability of dental care services. This entails the health professional to adopt a more practical approach to achieve primary prevention of oral diseases. The most viable solution seems to be dental health education. Hence in order to find out the most efficient dental health education method this study was designed as a community intervention trial.

AIM: To assess Effectiveness of various oral health education methods among 12-15 year old school going children in Kanchipuram District, TamilNadu.

OBJECTIVES*:* To Assess the Knowledge, Attitude and Practices of 12-15 year old school going children of Kanchipuram District,Tamil nadu through pre tested questionnaires.To Assess the Oral Health Status of 12-15 year old school going children of Chennai city using.1.OHI(s) index [Greene and Vermillion], 2. Gingival index [Loe and Sillness], 3. Plaque index [Sillness and Loe]**.** To assess the effectiveness of various oral health education methods among 12-15 year old school going children of Chennai city. To evolve

strategies to make oral health education more effective among 12-15 year old school going children.

METHODOLOGY: A Community Interventional type of study was designed. Four schools were selected using convienient sampling technique in Kanchipuram District of Tamil nadu with 463 students in the age group of 12-15 years as the study population. Three types of health education namely 1. Lecture method, 2. Peer induced method and 3. Audio visual aid method was imparted on three schools with the first school as the control. The study continued for three months with monthly interventions. Data were collected from all the schools at baseline and at the end of three months. Data regarding their oral health status was assessed subjectively by using pretested self administered questionnaires and objectively by using three idental indices namely OHI(s) index [Greene and Vermillion ,1964] Gingival index [Loe and Sillness 1964] Plaque index [Sillness and Loe, 1963].

RESULTS: The mean baseline Oral Hygiene Index scores in school 1 to school 4 were 2.7±0.9, 2.7±0.9, 2.6±0.08, 2.6±0.09 respectively. The mean baseline Plaque Index Scores in school 1 to school 4 were 1.9±0.5, 2.0±0.5, 2.0±0.4, 2.0±0.4 respectively and the mean baseline gingival index scores were 1.3±0.03, 1.4±0.36, 1.4±0.03, 1.4±0.03 respectively . The post intervention scores showed significant reduction in OHI-s and Plaque index (PII) in

school 2 and school 4 respectively. There was no significant difference in the pre and post intervention of the Gingival index (GI) but a positive shift towards betterment was observed.

CONCLUSION: Results showed that the dental health scores improved best in the group of children who were imparted with audio visual aided dental health education. It was followed by the health education induced by the lecture method and peer induced health education method.

KEY WORDS: Dental health education, Community intervention trial, School children, Targeted Public Distribution System (TPDS1997).

INTRODUCTION

Oral health is an integral part of general health. Poor oral health can have a detrimental effect on general health.[1] In case of children, oral health plays a vital role. Oral health renders profound influence on children's growth and development, on their physical, mental and social aspects, their performance in school, and hence their success in their later life time.[2] Studies have shown that children who suffer from poor oral health are twelve times more likely to have more restricted-activity days including missing school than children with good oral health.[3] More than 50 million hours annually are lost from school due to oral diseases.[4] While tooth decay (dental caries) and gum disease (inflammatory periodontal disease) are among the most prevalent or widespread conditions in human populations, other conditions such as trauma of teeth and jaws, dental erosion, developmental enamel defects and oral cancer are also important.[5] Premature loss of deciduous teeth may lead to malalignment of the permanent teeth, thus affecting an individual's appearance. Further, tooth loss can affect children's nutritional intake and consequently, their growth and development.[6]

While there has been improvement in oral health of children in the last few decades, tooth decay remains one of the most common childhood diseases, in both industrialised and developing countries.[7] A substantial proportion of children in many developing

countries are affected by tooth decay, and most of the time this decay is left untreated due to limited access to oral health services and poor socio economic conditions prevalent in developing countries.[8]

The oral health of children is a significant public health issue.[9] Oral diseases are the most diet and behaviour-related diseases. Childhood oral diseases, if untreated, can lead to irreversible damage, pain, disfigurement and more serious general health problems. It will also cause loss of school time, low self-esteem and poor quality of life among those children.[10] The delay in treatment not only results in aggravation of disease, but also costs of care are substantially escalates as a consequence. Adverse dental experience during childhood may lead to dental phobia, influencing negatively on attitudes to take oral health care as well as dental visiting behaviours for remaining life time.

The school provides an ideal setting for promoting oral health because dental health education given by teachers and reinforced by periodic dental check up and care will definitely reduce the dental diseases and help to maintain optimum oral health of children.[11] At the global level, approximately 80% of children attend primary schools and 60% complete at least four years of education, with wide variations between countries and gender. In some countries, more than 50% of children aged 7 to 14 years are out of school and less than 20% complete the first grade due to exploitation of child labour. Nonetheless, schools remain an important setting, offering

an efficient and effective way to reach over 1 billion children worldwide and through them, families and community members.[12]

The school years cover a period that runs from childhood to adolescence. These are influential stages in children's lives when lifelong sustainable oral health related behaviours, as well as beliefs and attitudes are being developed. Children are particularly receptive during this period and the earlier good oral habits are established, it will last longer in their life time. Moreover, the oral health care messages can be reinforced regularly throughout the school years[13]. Children may also be equipped with personal skills that enable them to make healthy decisions, to adopt a healthy lifestyle.

Schools are microcosms of the larger community. With existing structures and systems in place, schools provide excellent opportunities for integrating oral health into the curriculum that is acceptable, appropriate and effective. Children are receptive to guidance and they are familiar with the learning environment and culture in school[14].

Schools are a well-established system, have the potential to reach a large group of children efficiently. Schools are more widely distributed even in rural areas of developing countries than health centres and clinics.[15]

Prevention, early diagnosis and prompt treatment are therefore crucial in efforts to contain the costs of oral diseases.[16] Poor oral health in childhood often continues into adulthood,

impacting on economic productivity and quality of life. It has been reported that investment in oral disease prevention and health promotion decreases costs in health expenditure and is more cost-effective in the long-term.[5,6]

India, is the seventh-largest country by geographical area, the second-most populous country with a population of nearly hundred and seventeen millions and the most populous democracy in the world. India is a republic consisting of 28 states and seven union territories . It has the world's twelfth largest economy at market exchange rates and the fourth largest in purchasing power. Economic reforms since 1991 have transformed it into one of the fastest growing economies in the world. However, it still suffers from poverty, illiteracy and malnutrition and within adequate health care facilities. Even though a pluralistic, multilingual, and multiethnic society and estimated to contain the highest number of manpower in the year 2050, India is far below the ladder of health care facilities when compared to countries with the same economical portfolio and oral health is considered the least of the least.[16]

Even though oral health is very much a part of overall health, very little attention is being paid to this facet of health.[4] Prevention of dental diseases has assumed a lesser priority by the community as well as by the profession. A closer look at the advances being made in dentistry only reveals that more attention is being diverted to the secondary level of prevention of dental diseases.[4,5] The ever

growing population on one hand and the vast unmet dental needs on the other hand entail the dental professional to explore better strategies in combating these problems at the primary level of prevention.

Health education, a part of primary prevention, is one such key to rendering dental health services both to individuals and groups. Dental health education is considered to be an important and integral part of dental health education services.[17]

The health educational activities can be implemented at various levels for promotion of oral health namely, community, groups, family and individuals. Vital priority groups that can be targeted for preventive care are school children.[9,10]

Prevention is a critically important strategy for promoting good oral health among young people.[5,6] Most risk behaviours and lifestyles stem from school-age years.[5] Equally, good habits that are developed at a young age are more sustainable. Oral hygiene practices can easily be adopted and incorporated into daily routines such as eating and cooking. This is achieved through various methods of health education.[12] But the effectiveness in these various methods are still under the research stage and hence this study was designed to assess the effectiveness of various health education methods among 12 – 15 year old school going children in Kanchipuram District, Tamil nadu which is a rural area, where majority of the people belong to low economic status and their utilization of dental care is minimum.

The effectiveness of three different health education methods namely 1) Audio Visual projection a) Lecture method by the peer 2) Lecture method by dentist were assessed in this study.

The results thus obtained will be used to evolve strategies to make Dental health education more effective among the school children studying in other parts of rural Tamilnadu.

AIM AND OBJECTIVES

AIM:

To assess Effectiveness of various oral health education methods among 12-15 year old school going children in Kanchipuram District, Tamil Nadu.

OBJECTIVES:

1. To Assess the Knowledge, Attitude and Practices of 12-15 year old school going children of Kanchipuram District, Tamil nadu through pre tested questionnaires.
2. To Assess the Oral Health Status of 12-15 year old school going children of Kanchipuram District, Tamil Nadu
3. To assess the effectiveness of various oral health education methods among 12-15 year old school going children of Kanchipuram District, Tamil Nadu
4. To evolve strategies to make oral health education more effective among 12-15 year old school going children.

REVIEW OF LITERATURE

Kay EJ and locker D (1996)[18] combined 143 papers relating to dental health education intervention from 1982 to 1994. Each paper was scored by two independent researchers according to twenty predetermined validity criteria. For each of the papers which met more than 15 of the validity criteria quantitative meta-analysis was carried out. This combination of qualitative and quantitative review technique showed that dental health education have a small positive, but temporary effect on plaque accumulation (reduction in plaque index = 0.37 95% CI-0.29-0.59); no discernible effect on caries increment and a consistent positive effect on the knowledge levels. The results of this analysis suggest that farther efforts to synthesis current information about dental health education, in a systematic way are required along with maintenance of rigorous scientific standards in evaluation research

Lim LP, Davies WIR, Yuenand KW, Ma MH (1996)[19] conducted a study for the Comparison of modes of oral hygiene instruction in improving gingival health. 195 Hong Kong Chinese employees from a single company participated in a 10-month longitudinal study on the effects of various modes of delivery of oral hygiene messages on their gingival health. Subjects were allocated to one of the following modes of oral hygiene education: (i) personal instruction; (2) self education manual; (3) video; (4) a combination of 2 or more

of these modes of instruction. Scaling or any other form of periodontal treatment was not given throughout the study period. Full mouth clinical examinations were carried out using a Williams Periodontal probe to examine for the presence or absence of plaque and bleeding on probing from the gingival sulcus. At 2 weeks, 4 months and 10 months, results showed significant reductions in the mean % of plaque and bleeding when compared with baseline. No significant differences were found between the groups given the various modes of oral hygiene education. The study does confirm the effectiveness of oral hygiene alone in improving gingival health, but the lack of difference in the outcome of various oral hygiene education approaches indicates that the mode of instruction is not crucially important to the end result. However, it has to be acknowledged that improvement in oral hygiene may be related to factors other than the oral hygiene programme itself. The findings have significant implications in oral health promotion programmes to improve the periodontal status of the local community.

Wong MCM, Lo ECM ,Schwarz E and Zhang HG (1997)[20] conducted a study to assess the oral health status and oral health behaviours of Chinese children. The objectives of the study were to describe the oral health status and treatment needs of the 5- to 6-year old and 12-year-old children in Southern China; to describe the patterns of oral health behaviors, knowledge, and attitudes among the 12-year-olds; and to assess the effects of socio-behavioral

factors on the 12-year-old children's dental caries experiences. The study sample comprised of 1587 5- to 6-year-old and 1576 12-year-old urban and rural school children living in Guangdong Province, china. Three calibrated dentists clinically examined the children, and trained interviewers interviewed the 12- year-olds. Caries prevalence of the 5- to 6-year-old children was high (urban 78% vs. rural 86%); the mean dmft of the urban and rural children was 4.8 and 7.0, respectively. The caries prevalence and mean DMFT score of the 12-year-olds were 41% and 0.9 (urban) and 42% and 0.9 (rural). Only 2% of the 12- year-olds exhibited no calculus or gingival bleeding, while more than 70% had calculus. In conclusion, there is an urgent need for establishing caries preventive activities for preschool children. The prevalence of caries among the 12-year-olds was not high, but their periodontal condition was unsatisfactory. Knowledge about gum bleeding and the use of fluoride was low. They concluded more oral health education activities should be organized, especially for the rural children.

Van Palenstein Helderman WH, Munck L, Mushendwa S, van't Hof MA, Mrema FG(1997)[21] conducted a study to evaluate the Effectiveness of an oral health education programme among primary school children between the age group of 9 and 14 years in primary schools in Tanzania. This study aimed to assess the clinical oral health outcome effects among schoolchildren participating in a school-based oral health education (OHE) programme. Local social,

cultural and environmental conditions were determinants of the school-based OHE programme, which was compiled on the basis of prevailing beliefs and on what teachers and educational authorities considered to be important for the oral health of schoolchildren. Consequently, the practical aspects of oral hygiene and information on the cause and prevention of caries and gingivitis were the components of oral health education. The teachers were prepared to carry out weekly supervised tooth brushing sessions and monthly lessons on aspects of oral health for the school year in grade 4. Eight participating schools were selected for the clinical effect evaluation and four non-participating schools served as the control. In total, 309 children from the participating schools and 122 children from the non-participating schools were available for the evaluation. Their ages varied between 9 and 14 years. The mean plaque score, calculus score and gingival bleeding score at baseline and at follow-up examinations 3, 8, 15 and 36 months later were not significantly different for participating schools and controls. The mean DMFT value at baseline was 0.4 and 3 years later 0.9 in both the participating and control schools. In conclusion, the present study shows that the implemented school-based OHE programme did not result in significant reductions of the clinical parameters measured.

Vigild M, Petersen PE, Hadi R (1999)[22] conducted a study to assess the Oral health behaviour of 12-year-old children in Kuwait. The objectives of the study were: to describe the pattern of oral health behaviour of 12-year-old children in Kuwait, to analyse this in relation to parental education, dental visiting habits and location, and to establish a baseline for planning and evaluation of an oral health care programme for secondary school children. The Design was a Cross-sectional one, with interviews with children in 1995. The sample included 500 12-year-old schoolchildren (250 boys and 250 girls) selected from schools in Kuwait. All the children agreed to take part. Interviews with the children were carried out in the schools by four trained and calibrated Arabic speaking interviewers. The results are as follows: During the previous 12 months, 28% of the children had experienced oral health problems ± toothache (10%), or had felt discomfort (18%) either often or occassionally. The children reported that they needed oral hygiene instruction (71%), fillings (32%) and tooth extraction (23%). For 53% of the children the reason for the most recent visit to a dentist was pain or problems with teeth or gums. At their last dental visit 26% of the children had undergone a tooth extraction. The consumption of sugary foods and drinks was extremely high. Children who had visited a dentist within the last 12 months and children whose parents had higher education levels more often claimed frequent tooth brushing than those with no previous dental visiting

experience and those whose parents had a low level of education. Oral health education and oral health care programmes should be established in secondary schools in Kuwait to influence the oral health behaviour of the children and to avoid further deterioration in their oral health.

Redmond CA et al (1999)[23] investigated the value of the school based dental health education program in terms of changes in knowledge, reported behaviours and plaque scores by using a cluster randomized control study design involving 2678 pupils with a mean age of 12.1 years attending 28 schools. The pupils participated in a school based dental health education program. The pupils were divided into two groups with one group acting as control for first six months and then involving in the study for the next six months. The other half involved in the study intervention for twelve months. Hence comparision was done between the base line, three month intervention group and six month intervention group with the control group. The results were as follows:

	Baseline	**6 months**	**12 months**
1] Knowledge about periodontal diseases, frequency of sugar intake and dental caries incidence		Significant (P< 0.001)	Significant (P< 0.001)
2] Frequency of tooth brushing		N.S	N.S
3] Time taken for brushing		N.S	S (P<0.05)
4] Plaque accumulation (13% reduction in mean proportion of sites with plaque)@ six months Plaque accumulation (13% reduction in mean proportion of sites with plaque)@ twelve months		N.S N.S	S (P=0.043) S (P= 0.033)

Hence this trial demonstrated that the intervention program resulted in an improvement in knowledge of dental diseases and an increase in the duration of brushing. Hence there is a positive association between the oral hygiene importance and reduction in gingival bleeding.

Hawkins RJ, Zanetti DL, Main PA, Jokovic A, Dwyer JJM, Otchere DF, Locker D (2000)[24] conducted a study to assess the Oral hygiene knowledge of high-risk Grade One children and to evaluate two different methods of dental health education among high risk grade one students in the city of North York, Canada. The effectiveness of two methods of dental health education (DHE) for improving oral hygiene knowledge among high-risk Grade One students was evaluated. Fifty elementary schools in the former City of North York, Canada were assigned to one of two groups. In one group, students received a classroom based DHE lesson which was reinforced by two small-group sessions (*n*½243).In the other group, students received only a single classroom-based DHE lesson (*n*½206). After DHE interventions, students in both groups displayed improved knowledge for most oral hygiene questions (e.g., when should you throw your tooth brush away?). However, for several questions, a significantly higher proportion of ‘‘classroom plus small-group sessions’’ students displayed improved knowledge compared to students receiving only a classroom lesson. These items included: awareness that cavity prevention and removal of germs are two purposes of oral hygiene; and knowledge that teeth help people to eat and talk. Results suggest a classroom-based lesson combined with small-group sessions is a more effective method of improving oral hygiene knowledge among high-risk Grade One students compared to a single classroom-based lesson.

Mellanby AR, Rees JB and Tripp JH (2000)[25] critically reviewed available comparative research regarding peer-led and adult –led school health education. The authors have evaluated school based health education programs which have set out to compare the effects of peers or adults delivery the same material. The authors conclude that identified studies indicated that peer leaders were at least as, or more, effective that adults but also suggests extensive research in this area for definitive answers

Worthington H.V et al (2001)[26] conducted a cluster randomized controlled trial of a dental health education program for 10 year old children in north west of England . The objective of the study was to test the effectiveness of a dental health education program designed to improve the oral hygiene and dental knowledge of ten year old children using a cluster randomizes trial. Thirty two primary schools participated in the study from the north west of England. After a baseline assessment of plaque and completion of a dental knowledge questionnaire by the children, the schools were allocated randomly to either the active or control group. Children allocated in the active group received the health education, which consisted of four one hour lessons. After four months the children were examined clinically and scored for plaque , and a second questionnaire was administered. The schools in the control group was then allocated randomly to receive the program or not over the following three months, the program being withdrawn from the

schools who initially received it. A further assessment of plaque was made and a questionnaire administered seven months after the baseline of the study. The results showed that the active group had 20% and 17% lower mean plaque scores than the control group at four and seven months($P<0.001$). The children's knowledge of which type of tooth brush should be used and the role of disclosing tablets improved in the initial test group when compared with the control group and this was retained over the second part of the study. The authors thus concluded that the children receiving the program had significantly lower mean plaque scores and greater knowledge about tooth brushes and disclosing tablets than the control children who had not received the program.

Frencken JE, Borsum-Andersson K, Makoni F, Moyana F, Mwashaenyi S, Mulder J (2001)[27] conducted a study to evaluate the Effectiveness of an oral health education programme in primary schools in Zimbabwe after 3.5 years. This study was mainly done since many medical and dental professionals in African nations believe that school teachers, through attendance of a short workshop, can be trained to provide oral health education. This increases the number of professionals available and is regarded as an important way forward in improving oral health. The current study assesses the effectiveness of an oral health education programme administered by schoolteachers in a district in Zimbabwe over a period of 3.5 years. The experimental group

consisted of schools that had sent representatives to a regional workshop on oral health held in 1992. The control group was selected at random from schools not having attended the workshop. A total number of 439 boys and 526 girls were examined in 1992. Follow-up evaluations were carried out in 1993, 1994 and 1996. The dependent variables were plaque accumulation and caries increment in grade 2 and grade 4 children of experimental and control schools. ANOVA test with year of evaluation (1992–94), experiment/ control school, age and gender as independent variables showed no statistically significant difference in mean plaque scores in longitudinally examined study population ; The mean caries increment score in the experimental and control schools were 0.04 and 0.19, respectively. ANOVA test with fluoride levels and gender as independent variables on caries increment in experimental and control Science, The Netherlands schools did not show a statistically significant difference (*P*½0.06).The one-time training of teachers in aspects of oral health was ineffective in lowering plaque levels over a period of 3.5 years. Considering the low caries increment observed over the study period, the effect of the oral health programme on caries levels in the study group was inconclusive.

Friel.S et al (2002)[28] conducted a study to evaluate the impact of an oral health intervention amongst primary school children in Ireland. A pilot oral health programme was developed which aimed to

improve dental health knowledge and behaviour amongst Irish school children aged 7-/2 years. The programme comprised two integral components: a television campaign, run over a 6-week period, was incorporated into the children's programme 'Den TV' on national television, with video clips of a member of the music band boyzone promoting key oral health messages; and a smile of the year contest. Concurrently, a dental nurse delivered an interactive talk with pupils, showed a video of the Den TV oral health programme and distributed posters and leaflets. The aim of this study was to assess the impact of the overall intervention on school pupils' dental health knowledge and reported behaviour. Thirty-two primary schools in two health board regions in the republic of Ireland participated in the study. At baseline and after 6 weeks, 1534 school children completed specially developed questionnaires. There was a positive net effect of the dental nurse intervention in all but one question. The percentage of children who reported using the recommended amount of toothpaste and brushing for 3 min appeared to have been further increased having observed the television campaign. These results are in line with the argument that mass media campaigns work to supplement the one-to-one activities of health professionals in order to effect knowledge and behavioural change.

Frenkel HF, Harvey I, Needs KM.(2002)[29] conducted a randomized control trial on oral health care education and its effect on caregivers' knowledge and attitudes among 369 caregivers working in 22 nursing homes. The effect of an oral health care education programme (OHCE) upon nursing home caregivers was assessed in a randomised controlled trial. A self-administered questionnaire assessed oral health care knowledge and attitudes at baseline among 369 caregivers working in 22 nursing homes. Homes were randomly allocated to two groups. The intervention was a workplace OHCE. Caregivers assessed the value of the presentations. Questionnaires were re-administered 1 month (time 2) and 6 months (time 3) after the OHCE was delivered. The knowledge and attitude score means of the groups were compared. Open-ended questions solicited qualitative data. Questionnaire response rates at the three time points ranged from 76.3% to 85.4%. Two-thirds of caregivers employed at the time of the intervention attended the presentations. The OHCE was favourably assessed in 79% of responses. The intervention group significantly improved their scores over the control group at times 2 and 3 for knowledge (P,0.003) and attitude (P,0.001). Analysed across both arms at base- line, the main predictors for knowledge and attitude scores were age and dental attendance pattern. Qualitative responses showed an acceptance of caregivers' roles in oral health care and criticism of existing provision within homes. The OHCE was well received and resulted

in improved oral health care knowledge and attitudes. When viewed with separately reported trial results of clients' oral health status, knowledge and attitude score improvements coincided with improved delivery of oral health care.

Bastos L et al conducted a study (2002)[30] to assess the effectiveness of an oral hygiene program for Brazilian orphans. The study group consisted of 7 -11 year old children living in orphanage in Brazil. The program was based on professional tooth cleaning, as well as dental health information and oral hygiene instructions during a six month period. A total of 80 children were examined and 42 who had all the first molar erupted were selected for the study. Clinical measurements were recorded at baseline and after 3 and 6 months. Assessment of the efficacy of the program was based on plaque and gingivitis. At the final examination the mean percentage of surfaces without visible plaque was 36.2% in the experimental group and 15.1% in the control group. These values were also reflected in improved gingival health. The test group showed bleeding upon probing from less than 20% of their inter proximal areas, compared to 50% in the control group ($p < 0.01$) . The results of this study indicate improved oral health through the implementation of preventive programs among children who have never been exposed to preventive dental treatment and who are living under adverse social conditions.

Petersen P.E, Peng B, Tai B, Bian Z and Fan M (2004)[31] conducted a study among primary school children in Hongshan District, Wuhan city, Central China. The study was a three year follow up study which was to assess the Effect of a school-based oral health education programme in Wuhan City among primary school children. The objective was to assess the oral health outcomes of a school-based oral health education (OHE) programme on children, mothers and schoolteachers in China, and to evaluate the methods applied and materials used. The study was designed to incorporate the WHO Health Promoting Schools Project applied to primary schoolchildren in 3 experimental and 3 control schools in Hongshan District, Wuhan City, Central China, with a 3-year follow-up. Data on dental caries, gingival bleeding and behaviour were collected. The participants were 803 children and their mothers, and 369 teachers were included at baseline. After three years, 666 children and their mothers (response rate 83%), and 347 teachers (response rate 94%) remained. DMFT/ DMFS increments were comparable but the f/F components were higher among children in experimental schools than in control schools and the gingival bleeding score was, similarly, significantly lower. More children in experimental schools adopted regular oral health behaviour such as toothbrushing, recent dental visits, use of fluoride toothpaste, with less frequent consumption of cakes/biscuits compared to controls. In experimental schools,

mothers showed significant beneficial oral health developments, while teachers showed higher oral health knowledge and more positive attitudes, also being satisfied with training workshops, methods applied, materials used and involvement with children in OHE. The authors concluded that the programme had positive effects on gingival bleeding score and oral health behaviour of children, and on oral health knowledge and attitudes of mothers and teachers. No positive effect on dental caries incidence rate was demonstrated by the OHE programme.

Al-Omiri M.K, Al-Wahadni A.M, Saeed K.N (2005)[32] conducted a study among 10 to 16 year old school going children in North Jordan to assess the Oral Health Attitudes, Knowledge and Behavior Among School going Children. The aim of this study was to assess the knowledge, attitude, and behavior of school children towards oral health and dental care as well as to evaluate the factors that determine these variables. School children (n=557) of an average age of 13.5 years attending public schools in North Jordan were recruited into this study. The subjects completed a questionnaire that aimed to evaluate young school children's behavior, knowledge, and perception of their oral health and dental treatment. The participants' oral hygiene habits (such as tooth brushing) were found to be irregular, and parents' role in the oral hygiene habits of their children was limited. The study population showed higher awareness of caries than periodontal conditions. Irregular visits to

the dentist were found to be common, and toothache was the major driving factor for dental visits. Children had positive attitudes toward their dentists; nevertheless, they indicated that they feared dental treatment. The children in this study also recognized the importance of oral health to the well-being of the rest of the body. Parents were not proactive in making sure that their children received regular dental care. Parents' knowledge and attitudes about the importance of oral health care and their fears about dental treatment influenced their children's dental care. The results of this study indicate that children's and parents' attitudes toward oral health and dental care need to be improved. Comprehensive oral health educational programs for both children and their parents are required to achieve this goal.

Martensson C, Soderfeldt B, Andersson P, Halling A, Renvert S (2006)[33] conducted a study to assess the Factors behind change in knowledge after a mass media campaign targeting periodontitis based on a questionnaire in a cohort design, sent out to 900 randomly sampled people aged 50–75 in Sweden. The aim of this study was to investigate changes in knowledge before and after a mass media campaign, in relation to social attributes, care system attributes and oral health aspects. The response rate to the questionnaire before and after the campaign was 70% and 65% respectively. Sixty-four percent answered both questionnaires. Two questions addressed knowledge, while 10 questions aimed to

measure social attributes, care system attributes and oral health aspects. Data were analysed for bivariate relations as to change in knowledge and social attributes, care system attributes and oral health aspects. Data were also analysed in multiple regression analysis with knowledge before, knowledge after and knowledge differences as dependent variables. The results showed that there were a number of independent variables with influence on the dependent variables. Of the social attributes, secondary education gave almost 10% ($P < 0.001$) better knowledge both before and after the campaign. Among care system attributes, high care utilization was related to knowledge both before and after the campaign. The most important factors for knowledge about periodontitis were education, care utilization and perceived importance of oral health. In conclusion, this study demonstrates that mass media might increase knowledge about periodontitis as a health promotion strategy.

Sagheri D, Hahn P , Albert E, Hellwig S, Ludwigs A (2007)[34] conducted a study to assess the the oral health of school-age children and the current school-based dental screening programme in Freiburg ,Germany among 6 – 12 year old school going children . Germany has a three-tiered system of education at secondary school level, divided into the school types 'Hauptschule', Realschule' and 'Gymnasium'. All students receive, when aged 6–12 years, a uniform annual dental examination and oral health education

programme. The aim of this cross-sectional study was to report on the dental caries levels of school-age children stratified into these three different school types at secondary school level to enable oral healthcare personnel to administer a focused, school-based dental screening and education programme according to patients' needs rather than a uniform dental examination. A representative, random sample of 12-year-old school children in Freiburg (Germany) was examined and dental caries was recorded using WHO criteria. Results: A total of 322 12-year-old children participated. The mean DMFT was 0.69. An examination of the distribution of the DMFT score revealed that its distribution is positively skewed. For this reason, this study provides summary analyses based on medians and a non-parametric rank sum test. The non-parametric Kruskal-Wallis H-test showed a highly significant difference between median scores across the different school types (P-value = 0.004). The significance was a result of the 'Gymnasium' distribution of DMFT scores which differed markedly from the other two school types. Conclusions: The finding of the present study suggests that it may be useful to stratify the school dental screening and education programme according to school type and to prioritize children who attend 'Realschule' and 'Hauptschule'. This shift should systematically target children with the greatest need for dental care.

Nash D et al (2008)[35] complied a profile of the oral healthcare team in countries with emerging Economies. They concluded that

1. Oral health is a critical and integral dimension of general health and well-being.
2. Gaining and maintaining the benefits of oral health is a social good and should be an entitlement ensured by a society for all of its citizens.
3. Poverty and ignorance are significant barriers to achieving oral health in a population.
4. An inadequate oral health workforce is an additional barrier to achieving oral health. Therefore, developing a well-educated/ well-trained oral healthcare team is essential to effecting oral health for a nation's population.
5. Each country must develop a strategic plan for the oral health of the public that is based on the unique demographics of the country and the epidemiology of its oral diseases. Public health professionals have a unique role to play in developing such a plan. When these individuals are not available in an emerging economy, advice and consultation will have to be gained from international experts in the field.
6. A comprehensive oral health team consists of: dentists, specialist dentists, dental therapists and dental hygienists (or a combination of the two – an oral health therapist),

denturists, expanded function dental assistants/dental nurses and community oral health workers/aides.

7. The profile of the oral healthcare team, and the numbers emerging economy, should reflect the specific needs and circumstances of the country.
8. Prevention of oral disease is an ultimate goal and is to be desired above therapy. Therefore, an emerging economy should give priority consideration to funding and implementing all appropriate preventive strategies for its population.
9. As oral disease can begin in early childhood, and as children are a society's most vulnerable population, when resources are scarce they should be allocated to preventing and treating oral disease in children.
10. To assist in ensuring that oral health is understood to be an integral dimension of general health and well-being, and to assist in ensuring that dentists have an equivalency of education as other physicians, dental education should be integrated with medical education. Dentists can play a preventive and therapeutic role in helping manage health programmes beyond the stomatognathic (oral) complex.
11. All members of the oral health team, to the extent possible, should be educated / trained together, in order that they may understand the roles they play as members of the team. A

'career ladder' approach to dental education can provide an efficient and effective approach to education in relatively small countries with limited resources.

12. Due to the expense of dental education, all countries will not be able to educate/train every member of the oral healthcare team in their own country. As a consequence, developed economies must offer special opportunities for education and training of certain members of the oral healthcare team from emerging economies where resources are insufficient to provide comprehensive education/training for the oral healthcare team.

Knevel RJM, Neupane S, Shressta B, Mey LD (2008)[36] conducted a descriptive study as a first phase of a larger longitudinal study directed towards improving the oral health of children in Nepal. The project was named as Buddhi Bangara Project (BBP). The overall purpose of the Buddhi Bangara Project (BBP) is to investigate if oral health promotion (OHP) will be a realistic way to improve the oral hygiene and dental awareness of Nepalese schoolchildren aged 5–12 years. This study is the first aspect of the overall project. Dental hygiene students from Kantipur School of Dentistry, Kathmandu and the Dental Hygiene Programme at the INHOLLAND University in Amsterdam were actively involved in this assessment phase as well as the implementation phase which included oral health education activities. This descriptive study is the first phase

of a larger longitudinal study directed towards improving the oral health of children in Nepal. The first phase involves the assessment of children in several schools, one of which acts as a control group. It is directed toward the baseline data collected prior to the implementation of the OHP initiatives. Qualitative data on knowledge about oral health was collected through observations and a questionnaire. The World Health Organization community index of treatment needs was used to assess the clinical status of the participants. The data show that knowledge about preventing oral diseases is high, but awareness about the benefits of fluoride is low. It also suggests that the oral health of the examined children is affecting their quality of life in several different ways. The social status of participants appears to influence their dietary intake as well as their choice of professionals to visit when experiencing pain. It appears that children in Nepal have oral health problems and oral health does appear to influence their quality of life. The impact of the OHP activities have yet to be determined.

Farias IA , Souza GC, Ferreira MA, (2009)[37] designed a health education program for Brazilian public school children aged 7 to 15 years to assess the effects on dental health practice and oral health awareness. The objectives were to determine the impact of an oral health education program on oral hygiene and the awareness level of elementary schoolchildren. A total sample of 247 schoolchildren between the ages of 7 and 15 years from the public school system of

Parnamirim, Brazil, were selected and randomly allocated to a control (n = 115) and experimental (n = 132) group. Socio demographic data were recorded and a clinical examination was given to establish the decayed, missing and filled surfaces index (DMFS) and the dmfs index. The visible plaque index (VPI) and gingival bleeding index (GBI) were collected before and after the intervention. A closed-question questionnaire was applied to the schoolchildren before and after intervention to determine their knowledge of oral health. The experimental group took part in oral health education activities over a 4-month period. The VPI (P = 0.014; CI 0.24-0.86) and GBI (P = 0.013; CI 0.28-0.87) of the experimental group were significantly lower after educational activities. Similarly, the experimental group also obtained a higher number of correct answers on the questionnaire (P < 0.0001; CI 3.73-26.81). However, there was no association between oral hygiene indicators, VPI (P = 0.311; CI 0.23-1.60), and GBI (P = 0.927; CI 0.43-2.16), and the information level of the schoolchildren. The authors have concluded that contextualized educational activities in the school routine had positive effects on oral hygiene and the level of information about oral health, although the more informed individuals did not always practice better oral hygiene.

Yevlahova D, J Satur J (2009)[38] conducted a study to evolve Models for individual oral health promotion and their effectiveness .There is a recognized need to deliver oral health information to people during clinical encounters to enable them to develop personal skills in managing their own oral health. Traditional approaches to individual oral health education have been shown to be largely ineffective and new approaches are required to address personal motivations for preventive behaviour. Eighty-nine studies were retrieved and data were extracted from the 32 studies that met the inclusion criteria. Thirty-two studies were identified in the fields of clinical prevention and health education, motivational interviewing (MI), counselling, and models based interventions. MI interventions were found to be the most effective method for altering health behaviours in a clinical setting. There is a need to develop an effective model for chairside oral health promotion that incorporates this evidence and allows oral health professionals to focus more on the underlying social determinants of oral disease during the clinical encounter. There is potential to further develop the MI approach within the oral health field.

Jürgensen N and Petersen PE (2009)[39] conducted a cross sectional survey to assess the Oral health and the impact of socio-behavioural factors of 12-year old school children in Laos. In recent decades low-income countries experienced an increasing trend in dental caries among children, particularly recorded in 12-

year olds, which is the principal WHO indicator age group for children. This increases the risks of negative affects on children's life. Some data exist on the oral health status of children in low-income countries of Southeast Asia. However, information on how oral health is associated with socio-behavioural factors is almost not available. The aims of this study were to: assess the level of oral health of Lao 12-year-olds in urban and semi urban settings; study the impact of poor oral health on quality of life; analyse the association between oral health and socio-behavioural factors; investigate the relation between obesity and oral health. A cross sectional study of 12-year old schoolchildren chosen by multistage random sampling in Vientiane, Lao. The final study population comprised 621 children. The study consisted of: clinical registration of caries and periodontal status, and scores for dental trauma according to WHO; structured questionnaire; measurement of anthropometric data. Frequency distributions for bi-variate analysis and logistic regression for multivariate analysis were used for assessment of statistical association between variables. Results are as follows: Mean DMFT was 1.8 (SEM = 0.09) while caries prevalence was 56% (CI95 = 52-60). Prevalence of gingival bleeding was 99% (CI95 = 98-100) with 47% (CI95 = 45-49) of present teeth affected. Trauma was observed in 7% (CI95 = 5-9) of the children. High decay was seen in children with dental visits and frequent consumption of sweet drinks. Missed school classes, tooth

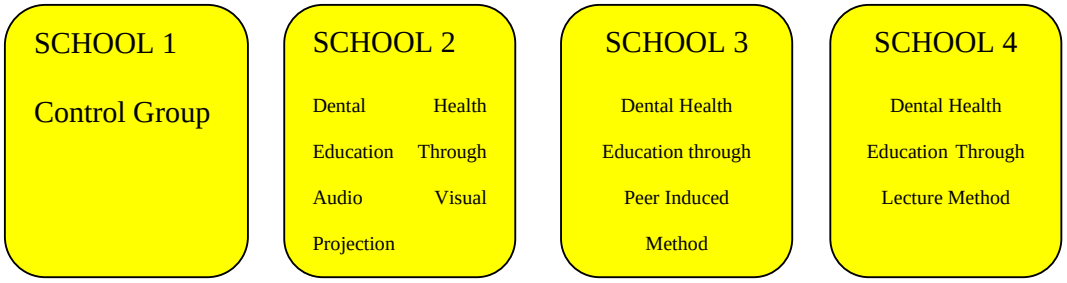
ache and several impairments of daily life activities were associated with a high dD-component. No associations were found between Body Mass Index (BMI) and oral health or common risk factors. The multivariate analyses revealed high risk for caries for children with low or moderate attitude towards health, a history of dental visits and a preference for drinking sugary drinks during school hours. Low risk was found for children with good or average perception of own oral health. High risk for gingival bleeding was seen in semi-urban children and boys. Although the caries level is low it causes considerable negative impact on daily life. School based health promotion should be implemented focusing on skills based learning and attitudes towards health.

Goel P, Sehgal M and Mittal.R (2009)[40] evaluated the effectiveness of dental health education program among 500 numbers of 10 -13 year old school children in three different schools from different socio economic groups. A ten item, open ended self administered questionnaire was used among the children before and after the educational intervention. Results showed poor oral health awareness of oral health among low socio economic background students and low awareness about oral health among younger age group.

MATERIALS AND METHODS

The present study was carried out in Kanchipuram District In Tamil Nadu. The study was designed as a community intervention trial in order to assess the effectiveness of three health education methods among 12 to 15 year old school going children attending government high schools in Kanchipuram District, Tamil nadu. The trial design had three test arms for the three types of health education and one school acted as control. The designation of the various schools belonging to the test and control groups were also follows.

The study design is as follows:



Initially the lists of all the schools present in kanchipuram district was obtained from the office of the Chief educational officer (CEO), kanchipuram district. The permission to conduct the study was obtained from the Chief educational officer (CEO) kanchipuram district and the study was presented to the ethical review board of Ragas Dental College, Chennai and permission was obtained. A detailed description about the nature of the study was explained to

the school authorities in order to obtain their permission and co-operation . There were totally 1210 schools all over the district out of which primary schools were 889, upper primary schools were 188, secondary schools were 84, and higher secondary 49. Since the target population were between 12 years and 15 years of age, primary schools were excluded in this study. Out of the remaining 321 schools 180 schools were government high schools. Students studying in Government high schools were only included in this study since socio economic status of the students were uniformly lower in these schools which was substantiated by including the colour of their ration cards used at their respective homes. Ration cards are socio economic markers under the Targeted Public Distribution System (TPDS1997)[41], Government of India. Hence students using ration cards bearing the colour of green which indicates they are from a lower socio economic status were only included in the study. (TPDS1997)[41]

Out of the 180 government schools four schools were randomly selected for the present study .All students in the age group of 12 to 15 years were included in the study. The total number of students participated in the study were 463. [A detailed table explaining the study subjects are included in the tables 1 and 2]. The study was designed as follows:

All students were provided with a self administered closed ended pretested questionnaire comprising of demographic data and 19 questions involving their perceived oral health status, behavior

towards dental problems and past dental experiences, oral hygiene practices, dietary history, adverse habits and oral health knowledge and attitude.

After filling the questionnaires under the observation of the concerned teachers which took approximately 30 minutes, the questionnaires were collected by the principal investigator. The oral health status was assessed using the three indices namely Oral Hygiene Index Simplified (OHI-S)[42], 1964, Plaque Index by Sillness and Loe (PII) [43], 1964 and Gingival Index by Loe and Sillness, (GI) [44]1963. The examination was done by the examiner alone.

Examination was conducted in the school premises, in the class rooms of the students under natural light, so positioning the subject as to receive sufficient daylight. Type-III clinical examination as recommended by American Dental Association (ADA) specification was followed.[45] The examiner was seated in front of the subject, in such a way that the examiner had a good control over the subject's movement as well as a secure position to work for the day.

The previously trained person recording the data was positioned seated on the left side of the patient close to the examiner, so that data recorder was able to hear the examiner's instructions and codes and also the examiner was able to see the data being entered.

Examination was carried out with the help of the following:

- Mouth Mirrors
- Tweezers
- Williams Periodontal probes
- Kidney Trays
- Cotton Holder
- Cotton Balls
- Disposable Mouth mask
- Disposable Gloves
- Chip blower
- Drape
- Surgical Spirit
- Hand Disinfectant
- Towel
- Liquid Soap
- Korsolex

Three dental indices were taken for each participant in a specially constructed proforma. The three indices are namely:

- Oral Hygiene Index Simplified (OHI-S) by Greene and Vermillion[42] 1964
- Plaque index by Sillness.P and Loe.H,(PII) [43]1964
- Gingival index by Loe.H and Sillness.P (GI) [44]1963

For the first school no health education was imparted since they acted as the control group. It was decided to provide them the necessary health education at the end of the study so that the concerned students get benefited too. Hence the concerned indices were taken for these school students without the provision of health education.

In the second school a health education power point presentation using a personal computer with Microsoft office power point 2007 software was prepared for this purpose. It consisted of various slides with pictorial representations and pre recorded voice explaining the slides. The slides contained health education materials in simplified English and care was taken to avoid any technically inclined dental terms as it might complicate the understanding capacity of the students. The pre recorded voice was in Tamil, explaining the course of events in the slides. The power point presentation was projected on to a wall using a LCD projector so as to create maximum visibility to the students.

In the third school, health education lecture was delivered by a peer from the same school, who was known to the target population and was famous among them. Usually peers are students of the same class or slightly elder than them who has good communication skills and leadership qualities. Selection of the peer was done well in advance by educating five NSS students of the same school and selecting the best one among them. It was done by giving them the lecture material on a particular day and was instructing them to reproduce the same material through lectures after a week's time. Their ability to retain and reproduce the lecture material was then assessed using questionnaires. The candidate who obtained the highest marks in filling the questionnaire right was selected as the lecture delivering peer for the students. The lecture was prepared according to the Oral Health Curriculum for Adoloscents[46] given by

the American Dental Association and it lasted for 30 minutes. It was delivered in simple Tamil devoid of any technical terms so that it could be easily understood by the students. It contained a brief overlook on subjects concerning the following:

- Dental anatomy
- Common oral diseases
- Oral hygiene instructions
- Dietary instructions and
- The importance of regular visits to a dentist

In the fourth school the concerned study population were provided health education through lecture by the dentist himself. Health education material that were used for the second school was used in the third school also.

The duration of the study was three months ie from February 2010 till May 2010.Monthly reinforcement of health education was given to all the students except the control group. The reinforcement consisted of repeating the same procedure of visual projections for the second school at one month intervals. Likewise lecture by peer was instilled to the third school and lecture by dentist for the fourth school respectively. At the end of three months the same pre tested self administered closed ended questionnaire was distributed among the same students and the filled forms were collected and data were entered into SPSS 14 and analysed using chi square test, paired T test and ANOVA .

BASELINE	FIRST MONTH	SECOND MONTH	THIRD MONTH
SCHOOL 1 **CONTROL GROUP** 1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963	NO INTERVENTION	NO INTERVENTION	1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963
SCHOOL 2 **HEALTH EDUCATION THROUGH AUDIO VISUAL AIDS** 1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL	REINFORCEMENT THROUGH AUDIO VISUAL AIDS	REINFORCEMENT THROUGH AUDIO VISUAL AIDS	1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION.

PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963			2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963
SCHOOL 3 **HEALTH EDUCATION THROUGH PEER INDUCED METHOD** 1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964	REINFORCEMENT OF HEALTH EDUCATION THROUGH PEER INDUCED METHOD	REINFORCEMENT OF HEALTH EDUCATION THROUGH PEER INDUCED METHOD	1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963

3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 **4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963**			
SCHOOL 4 **HEALTH EDUCATION THROUGH LECTURE METHOD** 1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963	REINFORCEMENT OF HEALTH EDUCATION THROUGH LECTURE METHOD	REINFORCEMENT OF HEALTH EDUCATION THROUGH LECTURE METHOD	1.FILLING OF THE QUESTIONNAIRRE BASED ON THE STUDY POPULATION'S PERCIEVED ORAL HEALTH STATUS, THEIR BEHAVIOUR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES, ORAL HYGIENE PRACTICES, DIETARY HISTORY, ADVERSE HABITS AND ORAL HEALTH KNOWLEDGE AND ATTITUDE WITH NO HEALTH EDUCATION. 2. ORAL HYGIENE SIMPLIFIED INDEX (OHI-S) BY GREENE AND VERMILLION, 1964 3.PLAQUE INDEX (PII) BY SILLNESS AND LOE, 1964 4. GINGIVAL INDEX (GII) BY LOE AND SILLNESS, 1963

ARMAMENTARIUM

ARMAMENTARIUM

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE CONTROL SCHOOL

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE CONTROL SCHOOL

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE LECTURE METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE LECTURE METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE PEER INDUCED METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE PEER INDUCED METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE PEER INDUCED METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING AND EXAMINATION OF STUDY SUBJECTS IN THE SCHOOL WHERE AUDIO VISUAL METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING BY STUDY SUBJECTS IN THE SCHOOL WHERE AUDIO VISUAL METHOD OF HEALTH EDUCATION WAS IMPARTED

QUESTIONNAIRRE FILLING BY STUDY SUBJECTS IN THE SCHOOL WHERE AUDIO VISUAL METHOD OF HEALTH EDUCATION WAS IMPARTED

RESULTS

This study was conducted to assess the effectiveness of various dental health education methods among 12 to 15 year old school going children in Kanchipuram District, Tamilnadu. Four different schools were selected for the present study in the district of Kanchipuram, Tamil nadu among which three schools were test groups and were imparted with different three types of health education and one school was the control group. Among 463 students who were present at the baseline, 13 students altogether from the four different schools were excluded since they did not fulfill the inclusion and exclusion criteria of presenting themselves for the study on the particular days when the examination was conducted.

The age wise distribution of study subjects is given in Table 1 and Graph 1. The total number of 12 years in school 1 were 40 (31.3%), in school 2 were 14 (14%) , in school 3 were 34 (28.1%) and in school 4 were 27 (23.7%) totaling to 115 (24.8%). The total number of 13 years in school 1 were 36 (28.1%), in school 2 were 27 (27%) ,in school 3 were 23 (19%) and in school 4 were 33 (28.9%) totaling to 119 (25.7%).The total number of 14 years in school 1 were 30 (23.4%), in school 2 were 26 (26%) ,in school 3 were 33 (27.3%) and in school 4 were 26 (22.8%) totaling to 115 (24.8%).The total number of 15 years in school 1 were 22 (17.2%),

in school 2 were 33 (33%) ,in school 3 were 31 (25.6%) and in school 4 were 28 (24.6%) totaling to 114 (24.6%).

The sex wise distribution of the study population in various schools are given in table 2 and Graph 2 . The total number of boys in school 1 were 64(50%) and girls were 64(50%). In school 2 the total number of boys were 63(63%) and girls were 37 (37%). In school 3 the boys were 66(54.5%) and girls were 55 (45.5%). In school 4 the boys were 52(45.6%) and girls were 62(54.4%).

Table 3 and Graph 3 depicts the distribution of the study population pre and post intervention based on their assessment regarding the health of their teeth. Amongst the study population, around 65 children in school 2 responded their health of their teeth as average or poor during pre intervention period [Pre intervention χ^2 = 10.851; p value = 0.703 N.S]. However after the intervention more children in school 2 perceived their oral health as average. Though there is an overall increase in the number of people who perceived their oral health as average in the post intervention, there is a significant increase in the number of children who perceived it as average in school 2. The Overall pre and post intervention perception of other school children did not differ significantly. [Post intervention χ^2 = 82.942 ; p value = 0.000 S]

Table 4 and Graph 4 depicts the distribution of the study population pre and post intervention based on their assessment regarding the health of their gums. In the pre intervention phase there was no significant difference in the responses of the test and

control group [Pre intervention χ^2 = 18.498 ; p value = 0.423 N.S]. However during the post intervention phase, there was a significant difference in the responses amongst the various tests and control schools. 13 and 54 children from school 2 responded their health of the gums as average and poor respectively during the pre intervention phase. However this response was changed to 50 and 16 children in the post intervention phase. [Post intervention χ^2 = 109.054 ; p value = 0.000 S]

Table 5 and Graph 5 depicts the distribution of the study population, pre and post intervention based on their assessment regarding the discomfort experienced because of their teeth within the past 12 months. In the pre intervention among the 463 (100%) from the various schools , 336(72.6%) students perceived that there was no discomfort experienced on account of their teeth for the past 12 months and 127 (27.4%) students perceived that discomfort was experienced on account of their teeth for the past 12 months. The statistical analysis between the different schools resulted in no significant difference among the pre intervention groups [Pre intervention χ^2 = 5.666 ; p value = 0.129 N.S] The responses obtained in the post intervention also did not show any significant difference among the various study groups. [Pre intervention χ^2 = 5.259 ; p value = 0.151 N.S]

Table 6 and Graph 3 depicts the distribution of the study population, pre and post intervention based on their assessment regarding the satisfaction attained because of their teeth. In the pre

intervention 267 (57.7%) students out of the total 463(100%) students from the various schools perceived that satisfaction was attained because of their teeth and 196 (43.3%) perceived that satisfaction was not attained because of their teeth. The statistical analysis between the different schools did not result in any significant difference based on their assessment regarding the satisfaction attained because of their teeth. [Pre intervention χ^2 = 1.243; p value = 0.743 N.S]. In the post intervention (81.6%) students from school 2 perceived that satisfaction was attained because of their teeth in contrast to 59 (59%) students in the pre intervention. Likewise 18 (18.4%) students from school 2 perceived that satisfaction was attained because of their teeth in contrast to 41 (41%) students in the pre intervention. However in the post intervention stage there existed a significant difference in the responses amongst the various test group schools. [Post intervention χ^2 = 20.312 ; p value = 0.000 S]

Table 7 and Graph 7 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their avoidance towards smiling and laughing because of their teeth. In the pre intervention out of the 463 (100%) students from the various schools 268 (57.9%) students perceived that they avoid smiling and laughing because of their teeth and 195 (42%) perceived that they do not avoid smiling and laughing because of their teeth. The statistical analysis between the various schools in pre intervention did not show any significant difference. [Pre

intervention χ^2 = 0.791; p value = 0.852 N.S]. In the post intervention too there seemed to be no significant difference among the various schools based on their assessment regarding their avoidance towards smiling and laughing because of their teeth. [Post intervention χ^2 = 0.847 ; p value = 0.838 N.S].

Table 8 and Graph 8 depicts the distribution of the study population, pre and post intervention based on the fun that is made by other children because of their teeth. In the pre intervention 237 (51.2%) students perceived that other children make fun of them because of their teeth whereas 226 (48.8%) students perceived that other children do not make fun of them because of their teeth. The statistical analysis also results in no significant difference between the various schools. [Pre intervention χ^2 = 0.755 ; p value = 0.860 N.S]. In the post intervention there seemed to be no significant difference among the various schools based on their assessment regarding the fun that is made by other children because of their teeth. [Post intervention χ^2 = 0.666; p value = 0.881 N.S].

Table 9 and Graph 9 depicts the distribution of the study population, pre and post intervention based on their wasted school hours due to dental problems in the past 12 months. In the pre intervention 348 (75.2%) students perceived that school hours were not wasted due to dental problems in the past 12 months whereas 115 (24.8%) students perceived that school hours were wasted due to dental problems in the past 12 months . The statistical analysis also results in no significant difference between the various schools.

[Pre intervention χ^2 = 9.071 ; p value = 0.028 N.S]. In the post intervention there seemed to be no significant difference among the various schools based on their assessment regarding the wasted school hours due to dental problems in the past 12 months. [Post intervention χ^2 = 8.587 ; p value = 0.035 N.S].

Table 10 and Graph 10 depicts the distribution of the study population, pre and post intervention based on the advice that they would receive from a dentist if they were to meet him. In the pre intervention 277(59.8%) students responded that the dentist would advice them to brush their teeth better whereas 142 (30.7%) students responded that they did not know what response they would receive from the dentist. The statistical analysis resulted in no significant difference between the responses obtained from the various schools. [Pre intervention χ^2 = 2.786 ; p value = 0.835 N.S]. However in the post intervention particularly in school 2 there were 77 (78.6%) students who agreed that the dentist would advice them to brush better which was an increase in the number of respondents compared to 57 (57%) students in the pre intervention. 12 (12.2%) students in the post intervention disagreed that the dentist would advice them to brush better in contrast to 33 (33%) students in the pre intervention which was a decrease in the response, hence there existed a significant difference between the responses from the different schools in the post intervention phase . [Post intervention χ^2 = 14.844; p value = 0.022 S].

Table 11 depicts the distribution of the study population, pre and post intervention based on the advice that they would receive from a dentist if they were to meet him. In the pre intervention 406 (87.7%) students responded that they do not know whether the dentist would advice them that the calculus from their teeth should be removed whereas 49 (10.6%) students responded affirmatively. The statistical analysis resulted in no significant difference between the responses obtained from the various schools. [Pre intervention $\chi^2 = 7.366$; p value = 0.288 N.S]. However in the post intervention particularly in school 2 there were 63 (64.3%) students who agreed that the dentist would advice them to remove the calculus from their teeth which was an increase in the number of respondents compared to 11 (11%) students in the pre intervention. 34 (34.7%) students in the post intervention did not know that the dentist would advice them to remove the calculus in contrast to 87 (87%) students in the pre intervention which was a decrease in the response, hence resulting in a significant difference between the responses from the different schools in the post intervention. [Post intervention $\chi^2 = 131.746$; p value = 0.000 S].

Table 12 depicts the distribution of the study population, pre and post intervention based on the advice that they would receive from a dentist if they were to meet him. In the pre intervention 426 (92%) students responded that they do not know whether the dentist would advice them that filling has to be done in their teeth whereas 37 (8%) students responded that the dentist would advice them to

fill their teeth. The statistical analysis resulted in no significant difference between the responses obtained from the various schools . [Pre intervention χ^2 = 0.019 ; p value = 0.999 N.S]. However in the post intervention particularly in school 2 there were 56 (57.1%) students who agreed that the dentist would advice them to fill their teeth which was an increase in the number of respondents compared to 8 (8%) students in the pre intervention. hence there was a significant difference between the responses from the different schools in the post intervention. [Post intervention χ^2 = 122.225 ; p value = 0.000 S].

Table 13 depicts the distribution of the study population, pre and post intervention based on the advice that they would receive from a dentist if they were to meet him. In the pre intervention 426 (92%) students responded that they do not know that the dentist would advice them that their teeth has to be removed whereas 37 (8%) students responded that the dentist would advice them to extract their teeth. The statistical analysis resulted in no significant difference between the responses obtained from the various schools [Pre intervention χ^2 = 0.019; p value = 0.999 N.S].However in the post intervention particularly in school 2 there were 54 (55.1%) students who agreed that the dentist would advice them to extract their teeth which was an increase in the number of respondents compared to 8 (8%) students in the pre intervention. 44 (44.9%) students in the post intervention did not know that the dentist would advice them to extract their teeth in contrast to 92 (92%)

students in the pre intervention which was a decrease in the response, hence resulting in a significant difference between the responses from the different schools in the post intervention . [Post intervention χ^2 =111.932 ; p value = 0.000 S].

Table 14 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their visit to a dentist in the last 12 months. In the pre intervention 409 (88.3%) students out of the 463 students have not met a dentist in the past 12 months whereas 54 (11.7%) students have met a dentist. The statistical analysis for the pre intervention does not show any significant difference in the response obtained from the different schools. [Pre intervention χ^2 = 1.262 ; p value = 0.738 N.S]. In the post intervention phase also there was no significant difference in the responses of the students. [Post intervention χ^2 = 1.396 ; p value = 0.706 N.S].

Table 15 depicts the distribution of the study population, pre and post intervention based on their reason for their last visit to a dentist. Among the 54 students who have visited a dentist in the pre intervention phase , 43 students attended because of the appointments made by the parents , 6 students due to the appointments initiated by the dentist and the rest by themselves. [Pre intervention χ^2 = 3.147 ; p value = 0.958 N.S]. A similar pattern was also seen in the post intervention phase. [Post intervention χ^2 = 3.269 ; p value = 0.953 N.S].

Table 16 and table 17 depicts the distribution of the study population, pre and post intervention based the type of treatment undergone during their last visit to a dentist. In the pre intervention 12 (2.6%) students responded that they underwent filling type of treatment, 16 (3.5%) students underwent cleaning, 18 (3.9%) students underwent extraction and 17 (3.7%) students underwent check up. On statistical analysis between the different schools in the pre intervention, no significant difference was observed. [Pre intervention for filling χ^2 = 3.043 ; p value = 0.803 N.S] [Pre intervention for cleaning χ^2 = 1.661 ; p value = 0.646 N.S]. [Pre intervention for extraction χ^2 = 1.007 ; p value = 0.800 N.S]. [Pre intervention for check up χ^2 = 5.392; p value = 0.145 N.S]. Likewise in the post intervention there was no statistical difference between the responses of the students from the four different schools. Responses regarding the type of treatment under went like cleaning, extraction and check up had insignificant difference on statistical analysis was observed in post intervention between the different schools. [Post intervention for filling χ^2 = 3.026 ; p value = 0.806 N.S] [Post intervention for cleaning χ^2 = 1.720 ; p value = 0.633 N.S]. [Post intervention for extraction χ^2 = 1.062; p value = 0.780 N.S]. [Post intervention for check up χ^2 = 5.507; p value = 0.138 N.S].

Table 18 depicts the distribution of the study population, pre and post intervention based on their assessment regarding the accompanying person during their last visit to a dentist. In the pre

intervention 19 (4.1%) students out of the 463 students responded that they visited a dentist accompanied by both their parents followed by 17 (3.7%) students who were accompanied only by their mothers. [Pre intervention $\chi^2 = 5.410$; p value = 0.943 N.S]. In the post intervention there was a similar pattern observed in the responses of the students regarding the accompanying person during their last visit to a dentist. [Post intervention $\chi^2 = 5.533$; p value = 0.938 N.S].

Table 19 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their frequency in brushing their teeth. In the pre intervention out of the 463 students, 447 (96.5%) students from the different schools responded that they brush once a day followed by 16 (3.5%) students who brush two or more times a day. There was no significant difference in the responses obtained from the students from the different schools. [Pre intervention $\chi^2 = 0.407$; p value = 0.939 N.S] . In the post intervention there was no significant difference in the responses obtained from the students of different schools. [Post intervention $\chi^2 = 1.360$; p value = 0.715 N.S].

Table 20 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their usage of tooth paste containing fluoride. In the pre intervention 463 students, 435 (94%) students responded that they were unaware about the presence of fluoride in their tooth pastes and 24 (5.2%) students responded that the tooth paste they use contain fluoride. On

statistical there was no significant difference between the responses obtained from four different schools. [Pre intervention χ^2 = 8.054 ; p value = 0.234 N.S]. However in the post intervention especially in school 2 , there was an increase in the respondents who answered that their tooth paste contained fluoride from 6(6%) students to 65 (66.3%) students and a decrease in the number of respondents who did not know their tooth paste contained fluoride from 93 (93%) students in the pre intervention to 32 (32.7%) students in the post intervention. on statistical analysis there was a significant difference in the responses obtained from the students from the four different schools regarding their usage of tooth paste containing [Post intervention χ^2 = 198.545 ; p value = 0.000 S].

Table 21 and Graph 21 depicts the distribution of the study population, pre and post intervention based on their assessment regarding the use of inter dental aid in cleaning their teeth. In the pre intervention out of 463 students , 459 (99.1%) students from the various schools responded that they do not use any inter dental aid to clean their teeth.(). On statistical analysis there was no significant difference in the responses obtained from the students of the four different schools. [Pre intervention χ^2 = 1.746 ; p value = 0.627 N.S]. However in the post intervention especially from school 2 , there was an increase in the number of respondents from no student to 42 (42.9%) students who used dental floss as an inter dental aid and a decrease in the number of students who responded that they do not use any inter dental aid from 99 (99%) students in

the pre intervention to 55 (56.1%) in the post intervention. On statistical analysis between the four different schools there was a significant difference in the responses obtained from the student regarding the use of inter dental aid in cleaning their teeth. [Post intervention χ^2 = 168.390 ; p value = 0.000 S].

Table 22, 23,24,25 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their dietary pattern . In the pre intervention out of the 463 students, 361 (78%) students responded that they take fresh fruits atleast once a week, 252 (54.4%) students responded that they take soft drinks atleast once in a day, 390 (84.2%) students responded that they take milk with sugar atleast once a day and 282 (60.9%) students responded that they take tea, coffee with sugar atleast once a day. Even in the post intervention the responses thus obtained from the students of the various schools did not show any significant difference. [soft drinks (pre intervention p value= 0.164 ; post intervention p value = 0.145), milk with sugar (pre intervention p value= 0.391 ; post intervention p value = 0.311), sweet intake (pre intervention p value= 0.164 ; post intervention p value = 0.145)and tea coffee with sugar. (pre intervention p value= 0.575 ; post intervention p value = 0.486)]

Table 26, 27 depicts the distribution of the study population, pre and post intervention based on their assessment regarding their adverse habits with respect to use of tobacco. In the pre intervention

out of 463 students, no student responded affirmatively that they use cigarettes or chewing tobacco. Even in the post intervention no student responded affirmatively that they use tobacco products.

Table 28 and Graph 28 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that teeth decay can make them look bad . In the pre intervention, out of the 463 students, 249 (53.8%) students agreed that tooth decay can make them look bad whereas 214 (46.2%) did not know that tooth decay can make them look bad The statistical analysis between the four schools did not have a significant difference between the responses. [Pre intervention $\chi^2 = 11.657$; p value = 0.009 N.S]. However in the post intervention especially in school 2, there was an increase in the number of respondents who agreed that teeth decay can make them look bad from 51 (51%) students in the pre intervention to 76 (77.6%) in the post intervention and a decrease in the respondents who did not know that tooth decay can make them look bad from 49 (49%) students in the pre intervention to 22 (22.4%) students in the post intervention .A significant difference in the responses of the students was observed in the post intervention. [Post intervention $\chi^2 = 28.509$; p value = 0.000 S].

Table 29 and Graph 29 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that keeping natural teeth is not that important. In the pre

intervention 367 (79.3%) students out of the 463 students responded that they disagree that keeping natural teeth is not that important. Moreover 96 (20.7%) students did not know that keeping natural teeth is not that important. The statistical analysis between the schools showed no significant difference between the different schools. [Pre intervention χ^2 = 2.762 ; p value = 0.430 N.S]. However in the post intervention especially from school 2, 16 (16.3%) agreed that keeping natural teeth was not that important in contrast to no student in pre intervention. Moreover 9 (9.2%) students did not know that keeping natural teeth was not that important compared to 25 (25%) students in the pre intervention. The statistical analysis for the post intervention among the various schools showed a significant difference. [Post intervention χ^2 = 63.769 ; p value = 0.000 S].

Table 30 and Graph 30 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that they avoid going to a dentist because of the possible pain. In the pre intervention 323 (69.8%) students out of the 463 students responded that they are afraid going to a dentist because of possible pain. Moreover 93 (20.1%) students did not know whether they are afraid of going to a dentist because of possible pain. The statistical analysis between the schools showed no significant difference between the different schools. [Pre intervention χ^2 = 1.894 ; p value = 0.929 N.S]. . However in the post intervention especially from school 2, 89 (90.8%) agreed that

they were afraid going to a dentist because of possible pain, in contrast to 70 (70%) students in pre intervention. The statistical analysis for the post intervention among the various schools showed a significant difference based on their responses. [Post intervention $\chi^2 = 26.287$; p value = 0.000 S].

Table 31 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that regular visits to the dentist keeps away dental problems. In the pre intervention 430 (92.9%) students out of the 463 students responded that they agree that regular visits to a dentist will keep away dental problems. Moreover 23 (5%) students did not know that that regular visits to a dentist will keep away dental problems. The statistical analysis between the schools showed no significant difference between the different schools. [Pre intervention $\chi^2 = 1.457$; p value = 0.962 N.S]. The response obtained in the post intervention from the different schools did not show any significant difference on statistical analysis [Post intervention $\chi^2 = 1.548$; p value = 0.956 N.S].

Table 32 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that brushing the teeth can prevent tooth decay. In the pre intervention 300 (64.8%) students out of the 463 students responded that they agree that brushing the teeth can prevent tooth decay. Moreover 159 (34.3%) students did not know that brushing the teeth can prevent tooth decay. The statistical analysis between the schools showed no

significant difference between the different schools. [Pre intervention χ^2 = 1.667 ; p value = 0.948 N.S]. The response obtained in the post intervention from the different schools did not show any significant difference on statistical analysis [Post intervention χ^2 = 2.404 ; p value = 0.879 N.S].

Table 33 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that eating and drinking sweet things does not cause tooth decay. In the pre intervention 154 (33.3%) students out of the 463 students responded that they disagree that eating and drinking sweet things does not cause tooth decay . Moreover 253 (54.6%) students did not know that eating and drinking sweet things does not cause tooth decay . The statistical analysis between the schools showed no significant difference between the different schools. [Pre intervention χ^2 = 10.578 ; p value = 0.102 N.S]. The response obtained in the post intervention from the different schools did not show any significant difference on statistical analysis. [Post intervention χ^2 = 12.124 ; p value = 0.059 N.S].

Table 34 depicts the distribution of the study population, pre and post intervention based on their assessment regarding that using fluoride is a good way of preventing tooth decay. In the pre intervention 59 (12.7%) students out of the 463 students responded that they agree that using fluoride is a good way of preventing tooth decay. Moreover 404 (87.3%) students did not know that using fluoride is a good way of preventing tooth decay . The statistical

analysis between the schools showed no significant difference between the different schools. [Pre intervention χ^2 = 2.480 ; p value = 0.479 N.S]. The response obtained in the post intervention from the different schools did not show any significant difference on statistical analysis [Post intervention χ^2 = 1.542 ; p value = 0.673 N.S].

Table 35 depicts the distribution of the study population, pre and post intervention based on their assessment regarding the source of information from which dental knowledge is acquired. In the pre intervention Television (243(52.5%) students) was the first choice of information followed by teachers (66(14.3%) students), relatives (47(10.2%) students), dentists (35(7.6%) students), parents (32(6.9%) students), friends (32(6.9%) students) and radio (8(1.7%) students) respectively. The statistical analysis showed no significant change in the responses. [Pre intervention χ^2 = 6.250 ; p value = 0.995 N.S]. In the post intervention also there was no significant difference in the responses of the students. [Post intervention χ^2 = 7.299 ; p value = 0.987 N.S].

Table 36 and Graph 36A depicts the change in the Oral Hygiene Index – Simplified (OHI-S) score before and after the oral health intervention programme among the study population. At the baseline level the oral hygiene index score did not varied significantly among the various study group populations. However after the oral health education intervention programme, the OHI-S score amongst the study group vary significantly. Amongst the

study group there was a significant reduction in the OHI-S scores in school 2 and school 4 respectively. The difference was more perform in school 2, where the pre and post OHI-S scores were 2.7± 0.9 and 1.7±1.2 respectively. [School 2(t value = 7.009 ; p value = 0.000) ; school 4 (t value = 5.846; p value = 0.000)]

Table 36 and Graph 36B also shows the difference in the plaque index (PII) score before and after the oral health intervention programme among the study population. At the baseline similar PII scores were obtained whereas after the intervention there was a significant variation between the PII scores. The significant change was experienced in school 2 and school 4 respectively., The difference was more perform in school 2 compared to school 4 where the pre and post PII scores were 2.0 ±0.5 and 1.0 ±0.03 respectively. [School 2(t value = 14.785 ; p value = 0.000) ; school 4 (t value = 4.692 ; p value = 0.000)]

Table 36 and Graph 36C shows the difference in the gingival index (GI) score before and after the oral health intervention programme among the study population. There was no significant difference between the pre and post intervention scores as compared to the other indices but a positive shift in the scores of gingival index are noted. . [School 2(t value = - 0.221 ; p value = 0.825) ; school 4 (t value = - 0.145 ; p value = 0.885)]

TABLE 1: AGE WISE DISTRIBUTION OF THE STUDY GROUP IN VARIOUS SCHOOLS

AGE	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
12 YEARS	40 31.3%	14 14%	34 28.1%	27 23.7%	115 24.8%
13 YEARS	36 28.1%	27 27%	23 19%	33 28.9%	119 25.7%
14 YEARS	30 23.4%	26 26%	33 27.3%	26 22.8%	115 24.8%
15 YEARS	22 17.2%	33 33%	31 25.6%	28 24.6%	114 24.6%

GRAPH 1: AGE WISE DISTRIBUTION OF THE STUDY GROUP IN VARIOUS SCHOOLS

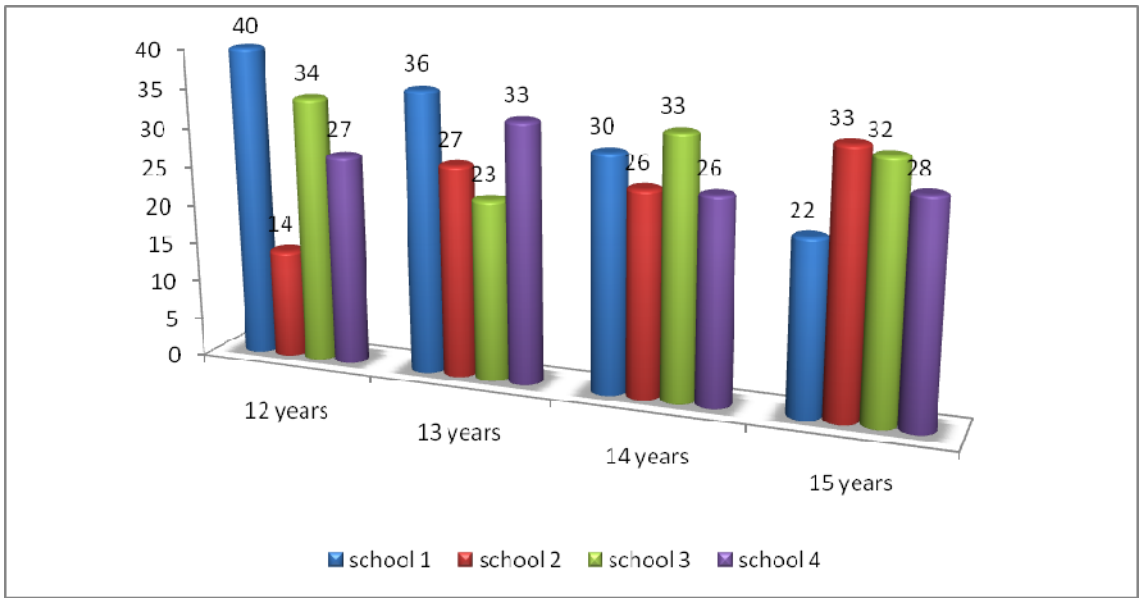


TABLE 2: SEX WISE DISTRIBUTION OF THE STUDY SUBJECTS IN VARIOUS SCHOOLS

SEX	SCHOOL 1	SCHOOL 2	SCHOOL 3	SCHOOL 4	TOTAL
MALE	64 50%	63 63%	66 54.5%	52 45.6%	245 52.9%
FEMALE	64 50%	63 63%	55 45.5%	62 54.4%	218 47.1%

GRAPH 2: SEX WISE DISTRIBUTION OF THE STUDY SUBJECTS IN VARIOUS SCHOOLS

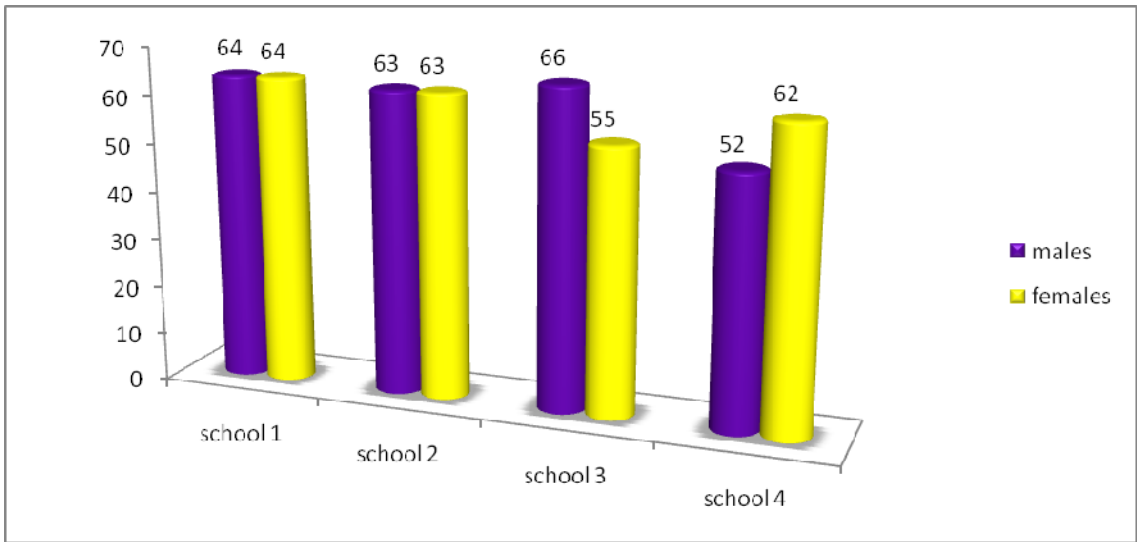


TABLE 3: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE HEALTH OF THEIR TEETH

	PRE INTERVENTION					POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
EXCELLENT	7 5.5%	6 6.0%	7 5.8%	5 4.4%	25 5.4%	7 5.6%	6 6.1%	7 6.0%	5 4.5%	25 5.6%
VERY GOOD	9 7.0%	6 6.0%	11 9.1%	9 7.9%	35 7.6%	9 7.2%	6 6.1%	11 9.4%	9 8.2%	35 7.8%
GOOD	22 17.2%	19 19.0%	29 24.0%	29 25.4%	99 21.4%	22 17.6%	19 19.4%	29 24.8%	29 26.4%	99 22.0%
AVERAGE	16 12.5%	15 15.0%	14 11.6%	14 12.3%	59 12.7%	15 12.0%	48 49.0%	13 11.1%	14 12.7%	90 20.0%
POOR	68 53.1%	50 50.0%	58 47.9%	57 50.0%	233 50.3%	66 52.8%	16 16.3%	55 47.0%	53 48.2%	190 42.2%
DON'T KNOW	6 4.7%	4 4.0%	2 1.7%	0 O%	12 2.6%	6 4.8%	3 3.1%	2 1.7%	0 0%	11 2.4%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%	125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 10.851 P VALUE = 0.763(NS)						**PEARSON CHI SQUARE VALUE = 82.942 P VALUE = 0.000 (S)**				

GRAPH 3: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE HEALTH OF THEIR TEETH

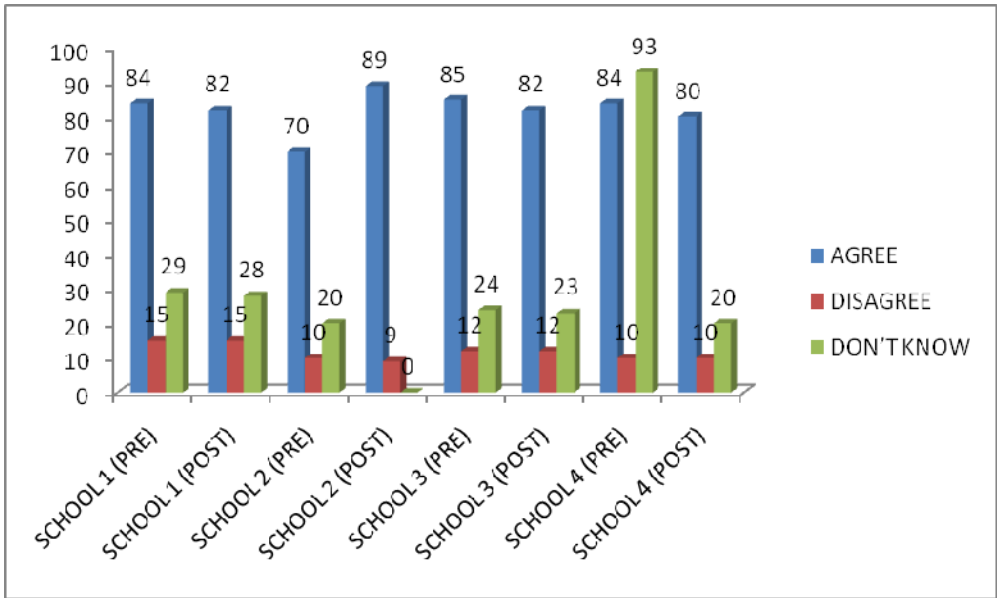


TABLE 4: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE HEALTH OF THEIR GUMS

	PRE INTERVENTION					POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
EXCELLENT	6 4.7%	5 5.0%	4 3.3%	4 3.5%	19 4.1%	6 4.8%	5 5.1%	4 3.4%	4 3.6%	19 4.2%
VERY GOOD	6 4.7%	6 6.0%	12 9.9%)	5 4.4%)	29 6.3%	6 4.8%	6 6.1%	12 10.3%	5 4.5%	29 6.4%
GOOD	21 16.4%)	18 18.0%	31 25.6%	27 23.7%	97 21.0%	21 16.8%	18 18.4%	31 26.5%	27 24.5%	97 21.6%
AVERAGE	14 10.9%	13 13.0%	12 9.9%	12 10.5%	51 11.0%	14 11.2%	50 51.0%	10 8.5%	12 10.9%	86 19.1%
POOR	73 57.0%)	54 (54.0%)	60 (49.6%)	66 (57.9%)	253 54.6%	70 56.0%	16 16.3%	58 49.6%	62 56.4%	206 45.8%
VERY POOR	2 1.6%	1 1.0%	0 0%	0 0%	3 0.6%	2 1.2%	1 1.0%	0 0%	0 0%	3 0.7%
DON'T KNOW	6 4.7%)	3 (3.0%)	2 (1.7%)	0 (O%)	11 2.4%	6 4.8%	2 2.0%	2 1.7%	0 0%	10 2.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 (100%)	125 100%	96 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 18.498 P VALUE = 0.423(NS)						**PEARSON CHI SQUARE VALUE =109.05 P VALUE = 0.000 (S)**				

GRAPH 4: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE HEALTH OF THEIR GUMS

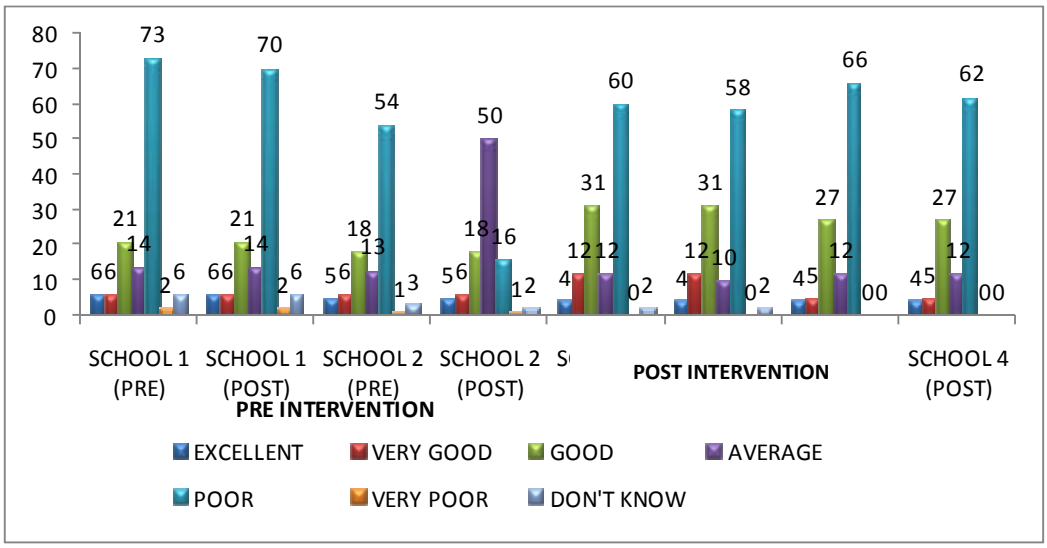


TABLE 5: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE DISCOMFORT EXPERIENCED BECAUSE OF THEIR TEETH WITHIN THE PAST 12 MONTHS

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	28 21.9%	25 25.0%	34 28.1%	40 35.1%	127 27.4%		28 22.4%	25 25.5%	33 28.2%	39 35.5%	125 27.8%
NO	100 78.1%	75 75%	87 71.9%	74 64.9%	336 72.6%		97 77.6%	73 74.5%	84 71.8%	71 64.5%	325 72.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 5.666 P VALUE = 0.129(NS)							**PEARSON CHI SQUARE VALUE = 5.295 P VALUE = 0.151 (NS)**				

GRAPH 5: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE SATISFACTION ATTAINED BECAUSE OF THEIR TEETH

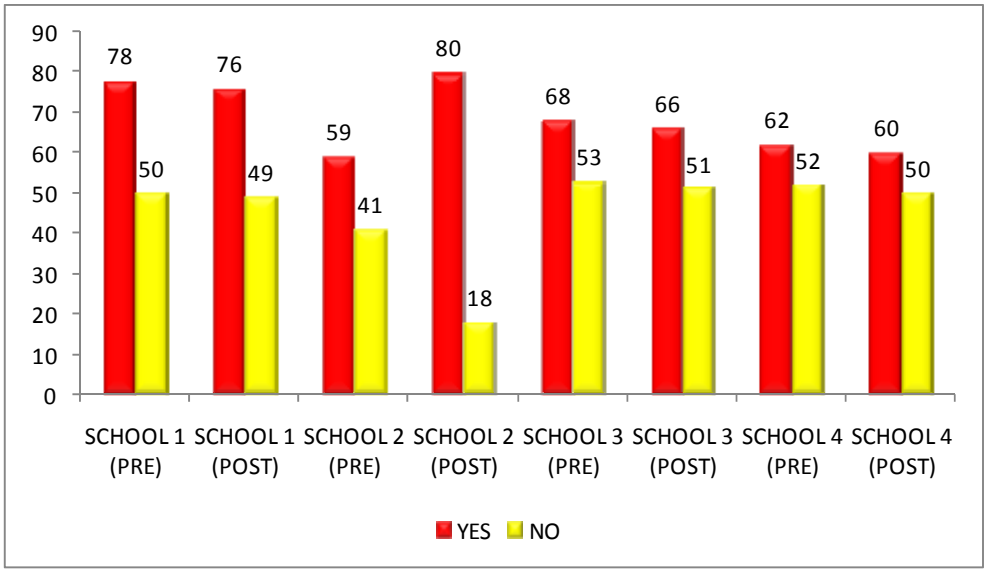


TABLE 6: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE SATISFACTION ATTAINED BECAUSE OF THEIR TEETH

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	78 60.9%	59 59.0%	68 56.2%	62 54.4%	267 57.7%		76 60.8%	80 81.6%	66 56.4%	60 54.5%	282 62.7%
NO	50 39.1%	41 41%	53 43.8%	52 45.6%	196 42.3%		49 39.2%	18 18.4%	51 43.6%	50 45.5%	168 37.3%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.243 P VALUE = 0.743 (NS)							**PEARSON CHI SQUARE VALUE = 20.312 P VALUE = 0.000 (S)**				

GRAPH 6: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM.

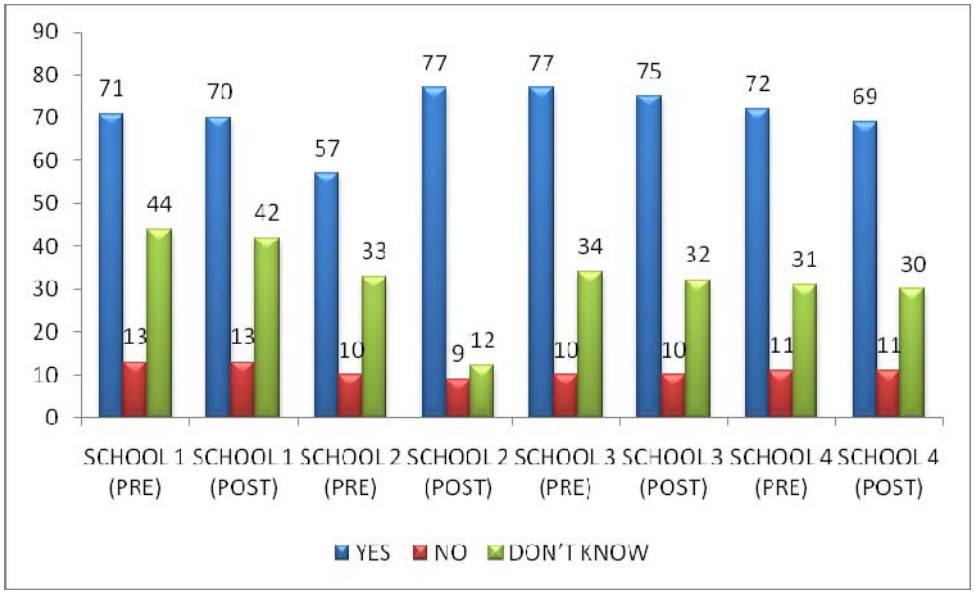


TABLE 7: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR AVOIDANCE TOWARDS SMILING AND LAUGHING BECAUSE OF THEIR TEETH

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	73 57%	57 57%	68 56.2%	70 61.4%	268 57.9%		71 56.8%	57 58.2%	66 56.4%	68 61.8%	262 58.2%
NO	55 43%	43 43%	53 43.8%	44 38.6%	195 42.1%		54 43.2%	41 41.8%	51 43.6%	42 38.2%	188 41.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 0.791 P VALUE = 0.852 (NS)							**PEARSON CHI SQUARE VALUE = 0.847 P VALUE = 0.838 (NS)**				

GRAPH 7: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM

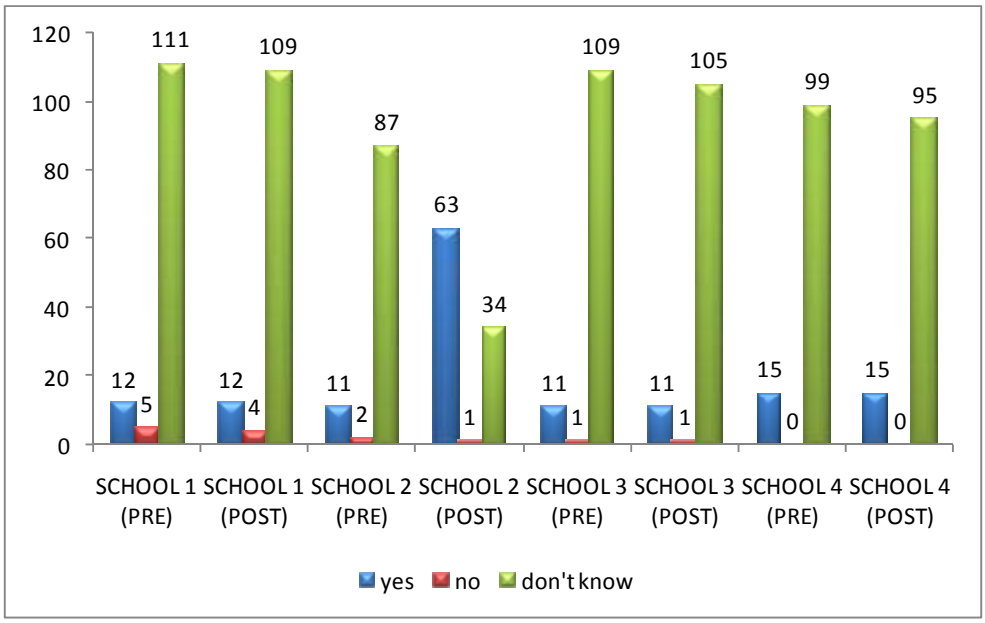


TABLE 8: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE FUN THAT IS MADE BY OTHER CHILDREN BECAUSE OF THEIR TEETH

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	69 53.9%	52 52.0%	59 48.8%	57 50.0%	237 51.2%		67 53.6%	51 52.0%	57 58.7%	55 50.0%	230 51.1%
NO	59 46.1%	48 48%	62 51.2%	57 50.0%	226 48.8%		58 46.4%	47 48.0%	60 51.3%	55 50.0%	220 48.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 0.755 P VALUE = 0.860 (NS)							**PEARSON CHI SQUARE VALUE = 0.666 P VALUE = 0.881 (NS)**				

GRAPH 8: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM

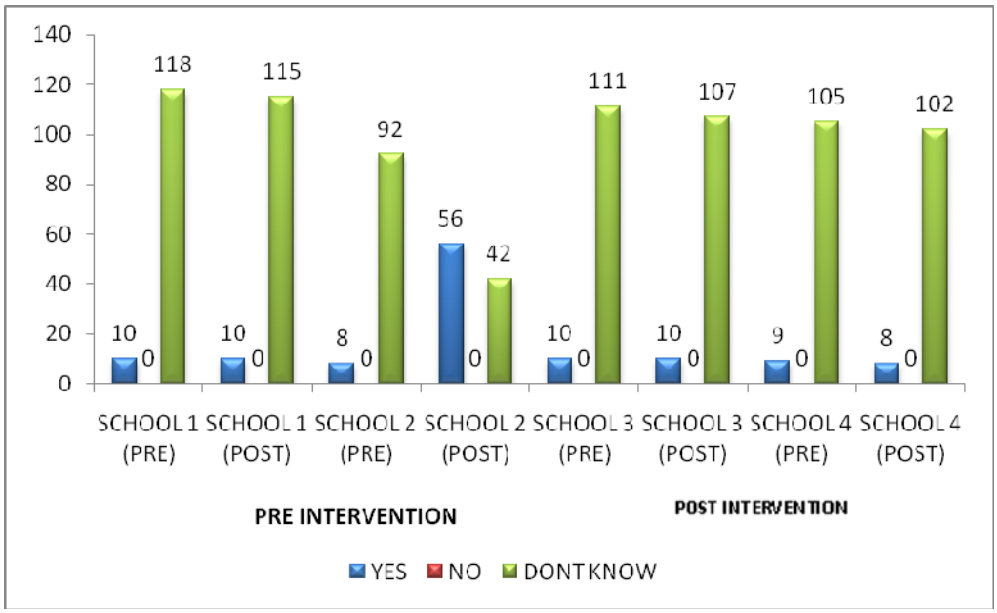


TABLE 9: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR WASTED SCHOOL HOURS DUE TO DENTAL PROBLEMS IN THE PAST 12 MONTHS

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	23 18.0%	22 22.0%	31 25.6%	39 34.2%	115 24.8%		23 18.4%	22 22.4%	30 25.6%	38 34.5%	113 25.1%
NO	105 82.0%	78 78%	90 74.4%	75 65.8%	348 75.2%		102 81.6%	76 77.6%	87 74.4%	72 65.5%	337 74.9%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 9.071 P VALUE = 0.028 (NS)							**PEARSON CHI SQUARE VALUE = 8.587 P VALUE = 0.035 (NS)**				

GRAPH 9: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM

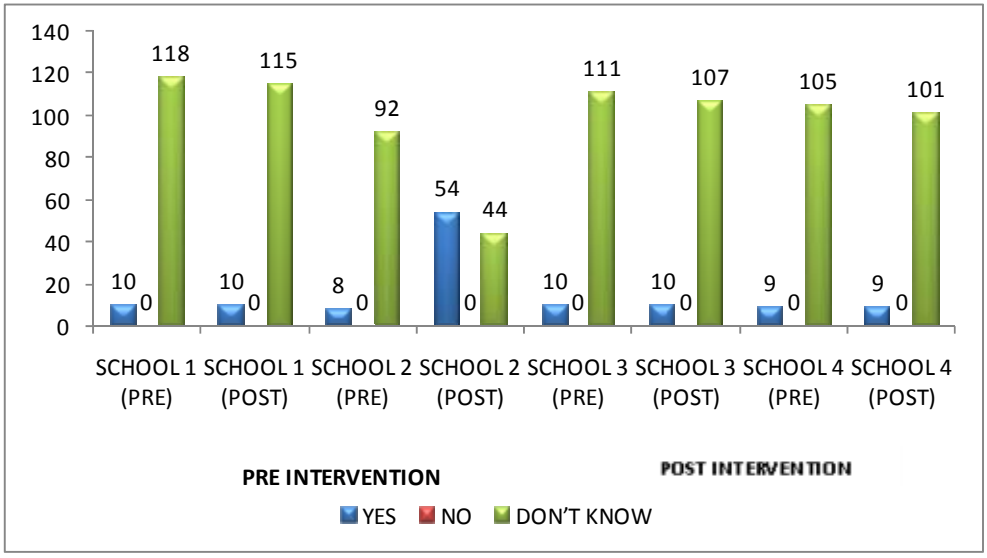


TABLE 10: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM.

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	71 55.5%	57 57.0%	77 63.6%	72 63.2%	277 59.8%		70 56.0%	77 78.6%	75 64.1%	69 62.7%	291 64.7%
NO	13 10.2%	10 10.0%	10 8.3%	11 9.6%	44 9.5%		13 10.4%	9 9.2%	10 8.5%	11 10.0%	43 9.6%
DON'T KNOW	44 34.4%	33 33.0%	34 28.1%	31 27.2%	142 30.7%		42 33.6%	12 12.2%	32 27.4%	30 27.3%	116 25.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 2.786 P VALUE = 0.835 (NS)							**PEARSON CHI SQUARE VALUE = 14.844 P VALUE = 0.022 (S)**				

GRAPH 10: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR USAGE OF TOOTH PASTE CONTAINING FLUORIDE

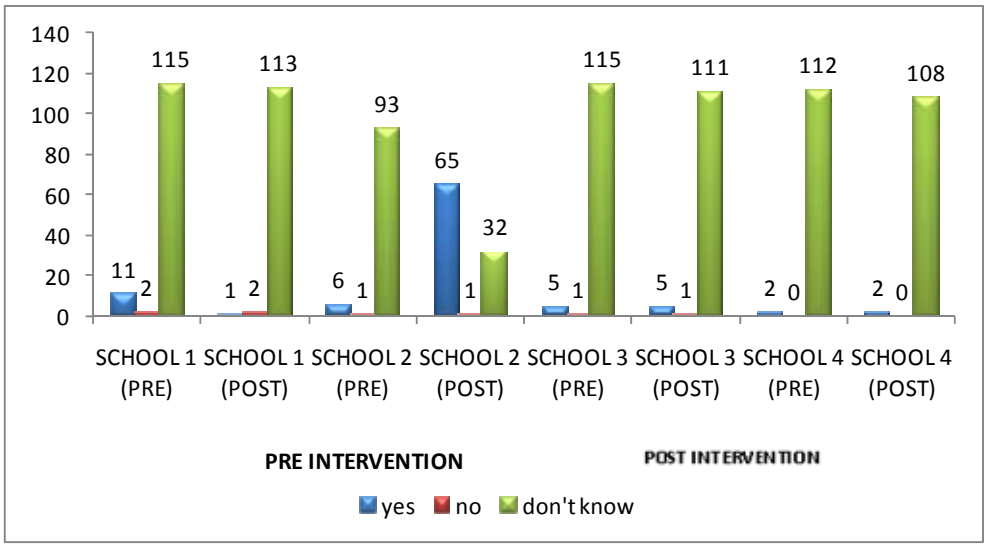


TABLE 11: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	12 9.4%	11 11.0%	11 9.1%	15 13.2%	49 10.6%		12 9.6%	63 64.3%	11 9.4%	15 13.6%	101 22.4%
NO	5 3.9%	2 02.0%	1 0.8%	0 0.0%	8 1.7%		4 3.2%	1 1.0%	1 0.9%	0 0.0%	6 1.3%
DON'T KNOW	111 86.7%	87 87.0%	109 90.1%	99 86.8%	406 87.7%		109 87.2%	34 34.7%	105 89.7%	95 86.4%	343 76.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 7.366 P VALUE = 0.288 (NS)							**PEARSON CHI SQUARE VALUE = 131.74 P VALUE = 0.000 (S)**				

TABLE 12: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	10 7.8%	8 8.0%	10 8.3%	9 7.9%	37 8.0%		10 8.0%	56 57.1%	10 8.5%	8 7.3%	84 18.7%
NO	0 0%	0 0%	0 0%	0 0.0%	0 0%		0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
DON'T KNOW	118 92.2%	92 92.0%	111 91.7%	105 92.1%	426 92%		115 92.0%	42 42.9%	107 91.5%	102 92.7%	366 81.3%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 0.019 P VALUE = 0.999 (NS)							**PEARSON CHI SQUARE VALUE = 122.22 P VALUE = 0.000 (S)**				

TABLE 13: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE ADVICE THAT THEY WOULD RECEIVE FROM A DENTIST IF THEY WERE TO MEET HIM.

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	10 7.8%	8 8.0%	10 8.3%	9 7.9%	37 8.0%		10 8.0%	54 55.1%	10 8.5%	9 8.2%	83 18.4%
NO	0 0%	0 0%	0 0%	0 0.0%	0 0%		0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
DON'T KNOW	118 92.2%	92 92.0%	111 91.7%	105 92.1%	426 92%		115 92.0%	44 44.9%	107 91.5%	101 91.8%	367 81.6%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 0.019 P VALUE = 0.999 (NS)							**PEARSON CHI SQUARE VALUE = 111.93 P VALUE = 0.000 (S)**				

TABLE 14: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR VISIT TO A DENTIST IN THE LAST 12 MONTHS

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	13 10.2%	10 10%	17 14%	14 12.3%	54 11.7%		13 10.4%	10 10.2%	17 14.5%	12 10.9%	52 11.6%
NO	115 89.8%	90 90%	104 86%	100 87.7%	409 88.3%		112 89.6%	88 89.8%	100 85.5%	98 89..1%	398 88.4%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.262 P VALUE = 0.738 (NS)							**PEARSON CHI SQUARE VALUE = 1.396 P VALUE = 0.706 (NS)**				

TABLE 15: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR REASON FOR THEIR LAST VISIT TO A DENTIST

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
PARENTS HAVE MADE AN APPOINTMENT	11 8.6%	8 8.0%	11 9.1%	13 11.4%	43 9.3%		11 8.8%	8 8.2%	11 9.4%	13 11.8%	43 9.6%
APPOINTMENT INITIATED BY THE DENTIST	1 0.8%	1 1.0%	1 0.8%	3 2.6%	6 1.3%		1 0.8%	1 1.0%	1 0.9%	3 2.7%	6 1.3%
I TOLD MY PARENTS TO TAKE ME TO THE DENTIST	1 0.8%	1 1.0%	1 0.8%	1 0.9%	4 0.9%		1 0.8%	1 1.0%	1 0.9%	1 0.9%	4 0.9%
I HAVE NOT MET A DENTIST IN LIFE	115 89.8%	90 90%	108 89.3%	97 85.1%	410 88.6%		112 89.6%	88 89.8%	104 88.9%	93 84.5%	397 88.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 3.147 P VALUE = 0.958 (NS)							**PEARSON CHI SQUARE VALUE = 3.269 P VALUE = 0.953 (NS)**				

TABLE 16: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE TYPE OF TREATMENT UNDERGONE DURING THEIR LAST VISIT TO A DENTIST

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
FILLING											
YES	5 3.9%	3 3.0%	1 0.8%	3 2.6%	12 2.6%		5 4%	3 3.1%	1 0.9%	3 2.7%	12 2.7%
NO	123 96.1%	97 97%	120 99.2%	111 97.4%	451 97.4%		119 95.2%	94 95.9%	114 97.4%	105 95.5%	432 96%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 3.043 P VALUE = 0.803 (NS)							**PEARSON CHI SQUARE VALUE = 3.026 P VALUE = 0.806 (NS)**				
CLEANING											
YES	3 2.3%	3 3%	4 3.3%	6 5.3%	16 3.5%		3 2.4%	3 3.1%	4 3.4%	6 5.5%	16 3.6%
NO	125 97.7%	97 97%	117 96.7%	108 94.7%	447 96.5%		122 97.6%	95 96.6%	113 96.6%	104 94.5%	434 96.4%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.661 P VALUE = 0.646 (NS)							**PEARSON CHI SQUARE VALUE = 1.720 P VALUE = 0.633 (NS)**				

TABLE 17: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THE TYPE OF TREATMENT UNDERGONE DURING THEIR LAST VISIT TO A DENTIST

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
EXTRACTION											
YES	4 3.1%	3 3%	5 4.1%	6 5.3%	18 3.9%		4 3.2%	3 3.1%	5 4.3%	6 5.5%	18 4%
NO	124 96.9%	97 97%	116 95.9%	108 94.7%	445 96.1%		121 96.8%	95 96.9%	112 95.7%	104 94.5%	432 96%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.007 P VALUE = 0.800 (NS)							**PEARSON CHI SQUARE VALUE = 1.062 P VALUE = 0.786 (NS)**				
CHECK UP											
YES	2 1.6%	3 3.0%	4 3.3%	8 7%	17 3.7%		2 1.6%	3 3.1%	4 3.4%	8 7.3%	17 3.8%
NO	126 98.4%	97 97%	117 96.7%	106 93%	446 96.3%		123 98.4%	95 96.9%	113 96.6%	102 92.7%	433 96.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 5.392 P VALUE = 0.145 (NS)							**PEARSON CHI SQUARE VALUE = 5.507 P VALUE = 0.138 (NS)**				

TABLE 18: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE ACCOMPANING PERSON DURING THEIR LAST VISIT TO A DENTIST

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
MOTHER	5 3.9%	4 4%	3 2.5%	5 4.4%	17 3.7%		5 4.0%	4 4.1%	3 2.6%	5 4.5%	17 3.8%
FATHER	3 2.3%	2 2%	2 1.7%	2 1.8%	9 1.9%		3 2.4%	2 2.0%	2 1.7%	2 1.8%	9 2.0%
BROTHER	2 1.6%	1 1%	3 2.5%	2 1.8%	8 1.7%		2 1.6%	1 1.0%	3 2.6%	2 1.8%	8 1.8%
FRIENDS	O 0%	0 0%	O 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
BOTH THE PARENTS	3 2.3%	3 3%	5 4.1%	8 7%	19 4.1%		3 2.4%	3 3.1%	5 4.3%	8 7.3%	19 4.2%
I HAVE NOT GONE TO A DENTIST	115 89.8%	90 90%	108 89.3%	97 85.1%	410 88.6%		112 89.6%	88 89.8%	104 88.9%	93 84.5%	397 88.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 5.410 P VALUE = 0.943(NS)							**PEARSON CHI SQUARE VALUE = 5.533 P VALUE = 0.938 (NS)**				

TABLE19. DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR FREQUENCY IN BRUSHING THEIR TEETH

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
ONCE A DAY	123 96.1%	96 96%	117 96.7%	111 97.4%	447 96.5%		120 96%	94 95.9%	114 97.4%	108 98.2%	436 96.9%
TWO OR MORE TIMES A DAY	5 3.9%	4 4%	4 3.3%	3 2.6%	16 3.5%		5 4%	4 4.1%	3 2.6%	2 1.8%	14 3.1%
ONCE A WEEK	0 0%	O O%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
TWO TO THREE TIMES A WEEK	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
NEVER	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 0.407 P VALUE = 0.939(NS)							**PEARSON CHI SQUARE VALUE = 1.360 P VALUE = 0.715 (NS)**				

TABLE 20: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR USAGE OF TOOTH PASTE CONTAINING FLUORIDE

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
YES	11 8.6%	6 6.0%	5 4.1%	2 1.8%	24 5.2%		10 8.0%	65 66.3%	5 4.3%	2 1.8%	82 18.2%
NO	2 1.6%	1 1%	1 0.8%	0 0.0%	4 0.9%		2 1.6%	1 1%	1 0.9%	0 0.0%	0 0.0%
DON'T KNOW	115 89.8%	93 93.0%	115 95%	112 98.2%	435 94.0%		113 90.4%	32 32.7%	111 94.9%	108 98.2%	364 80.9%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 8.054 P VALUE = 0.234 (NS)							**PEARSON CHI SQUARE VALUE = 198.54 P VALUE = 0.000 (S)**				

TABLE 21: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE USE OF INTERDENTAL AID IN CLEANING THEIR TEETH

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
DENTAL FLOSS	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	42 42.9%	0 0%	0 0%	42 9.3%
CHARCOAL	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
CHEW STICK	2 1.6%	1 1%	1 0.8%	0 0%	4 0.9%		2 1.6%	1 1%	1 0.9%	0 0%	4 0.9%
PLASTIC TOOTH PICKS	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
OTHERS	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
I DON'T USE ANY	126 98.4%	99 99.%	120 99.2%	114 100%	459 99.1%		123 98.4%	55 56.1%	116 99.1%	110 100%	404 89.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100.0%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.746 P VALUE = 0.627(NS)							**PEARSON CHI SQUARE VALUE = 168.39 P VALUE = 0.000 (S)**				

GRAPH 21: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE USE OF INTER DENTAL AID IN CLEANING THEIR TEETH.

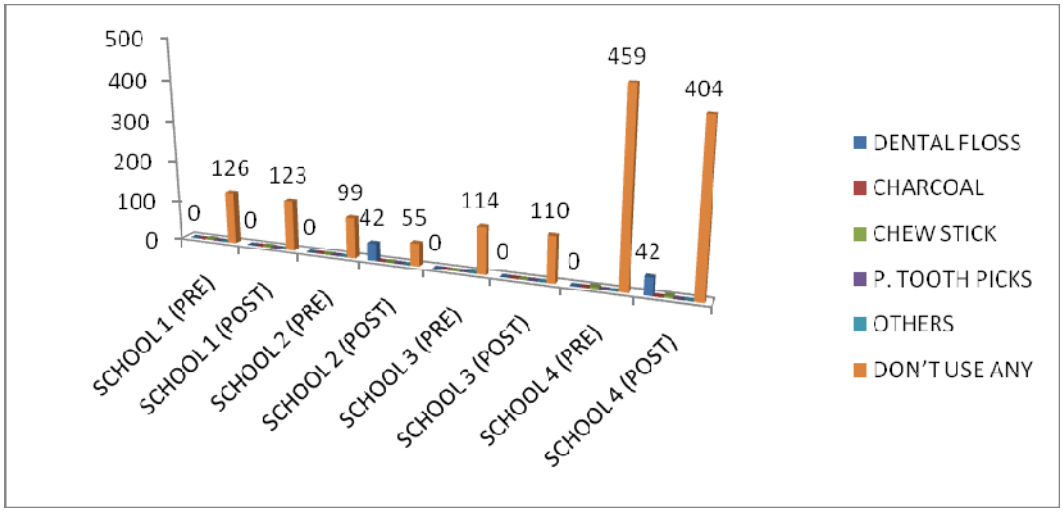


TABLE 22: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR DIETARY PATTERN

PRE INTERVENTION						POST INTERVENTION				
FRESH FRUITS										
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	12 9.4%	8 8.0%	6 5.0%	3 2.6%	29 6.3%	11 8.8%	7 7.1%	5 4.3%	3 2.7%	26 5.8%
ATLEAST ONCE A DAY	24 18.8%	16 16.0%	21 17.4%	12 10.5%	73 15.8%	24 19.2%	15 15.3%	21 17.9%	12 10.9%	72 16.0%
ATLEAST ONCE A WEEK	92 71.9%	76 76.0%	94 77.7%	99 86.8%	361 78.0%	90 72%	76 77.6%	91 77.8%	95 86.4%	352 78.2%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%	125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 9.907 P VALUE = 0.129(NS)						**PEARSON CHI SQUARE VALUE = 8.970 P VALUE = 0.175 (NS)**				

TABLE 23: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR DIETARY PATTERN

PRE INTERVENTION						POST INTERVENTION				
SOFT DRINKS										
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	15 11.7%	14 14.0%	21 17.4%	28 24.6%	78 16.8%	15 12.0%	14 14.3%	21 17.9%	28 25.5%	78 17.3%
ATLEAST ONCE A DAY	70 54.7%	57 57.0%	65 53.7%	60 52.6%	252 54.4%	69 55.2%	55 56.1%	62 53.0%	58 52..7%	244 54.2%
ATLEAST ONCE A WEEK	43 33.6%	29 29.0%	35 28.9%	26 22.8%	133 28.7%	41 32.8%	29 29.6%	34 29.1%	24 21.8%	128 28.4%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%	125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 9.177 P VALUE = 0.164(NS)						**PEARSON CHI SQUARE VALUE = 9.545 P VALUE = 0.145 (NS)**				

TABLE 24: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR DIETARY PATTERN

PRE INTERVENTION						POST INTERVENTION				
MILK WITH SUGAR										
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	5 3.9%	3 3%	3 2.5%	0 O%	11 2.4%	5 4.0%	2 2.0%	3 2.6%	0 0.0%	10 2.2%
ATLEAST ONCE A DAY	106 82.8%	84 84.0%	98 81.0%	102 89.5%	390 84.2%	103 82.4%	83 84.7%	94 80.3%	99 90..0%	379 84.2%
ATLEAST ONCE A WEEK	17 13.3%	13 13.0%	20 16.5%	12 10.5%	62 13.4%	17 13.6%	13 13.3%	20 17.1%	11 10.0%	61 13.6%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%	125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 6.295 P VALUE = 0.391(NS)						**PEARSON CHI SQUARE VALUE = 7.108 P VALUE = 0.311 (NS)**				

TABLE 25: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR DIETARY PATTERN

PRE INTERVENTION						POST INTERVENTION				
TEA, COFFEE WITH SUGAR										
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL	SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	4 3.1%	2 2.0%	2 1.7%	0 0%	8 1.7%	4 3.2%	1 1.0%	2 1.7%	0 0%	7 1.6%
ATLEAST ONCE A DAY	73 57%	59 59%	76 62.8%	74 64.9%	282 60.9%	71 56.8%	58 59.2%	72 61.5%	72 65.5%	273 60.7%
ATLEAST ONCE A WEEK	51 39.8%	39 39.0%	43 35.5%	40 35.1%	173 37.4%	50 40%	39 39.8%	43 36.8%	38 34.5%	170 37.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%	125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 4.759 P VALUE = 0.575(NS)						**PEARSON CHI SQUARE VALUE = 5.462 P VALUE = 0.486 (NS)**				

TABLE 26: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR ADVERSE HABITS WITH RESPECT TO USE OF TOBACCO

PRE INTERVENTION							POST INTERVENTION				
USAGE OF CIGARETTES, PIPES OR CIGARS:											
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
EVERY DAY	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
ATLEAST ONCE A WEEK	**0 0%**	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
SEVERAL TIMES A MONTH	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%

TABLE 27: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THEIR ADVERSE HABITS WITH RESPECT TO USE OF TOBACCO

PRE INTERVENTION							POST INTERVENTION				
USAGE OF CHEWING TOBACCO:											
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
NEVER	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
EVERY DAY	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
ATLEAST ONCE A WEEK	**0 0%**	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
SEVERAL TIMES A MONTH	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%

TABLE 28: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT TEETH DECAY CAN MAKE THEM LOOK BAD

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	58 45.3%	51 51.0%	64 52.9%	76 66.7%	249 53.8%		56 44.8%	76 77.6%	61 52.1%	72 65.5%	26 58.9%
DISAGREE	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
DON'T KNOW	70 54.7%	49 49.0%	57 47.1%	38 33.3%	214 46.2%		69 55.2%	22 22.4%	56 47.9%	38 34..5%	185 41.1%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 11.657 P VALUE = 0.009 (NS)							**PEARSON CHI SQUARE VALUE = 28.509 P VALUE = 0.000 (S)**				

GRAPH 28: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT TEETH DECAY CAN MAKE THEM LOOK BAD

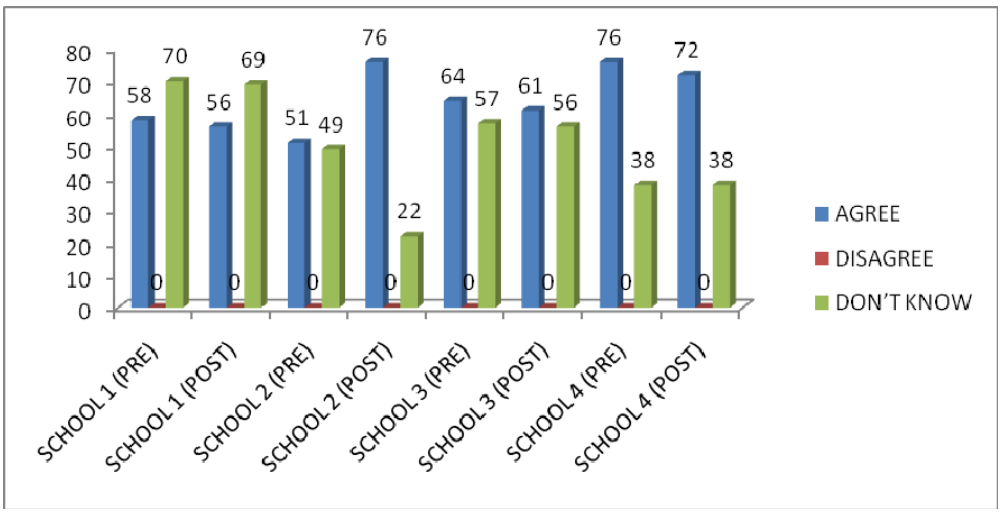


TABLE 29: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT KEEPING NATURAL TEETH IS NOT THAT IMPORTANT

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	16 16.3%	0 0%	0 0%	16 3.6%
DISAGREE	99 77.3%	75 75.0%	98 81.0%	95 83.3%	367 79.3%		97 77.6%	73 74.5%	95 81.2%	91 82.7%	356 79.1%
DON'T KNOW	29 22.7%	25 25.0%	23 19.0%	19 16.7%	96 20.7%		28 22.4%	9 9.2%	22 18.8%	19 17.3%	78 17.3%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 2.762 P VALUE = 0.430 (NS)							**PEARSON CHI SQUARE VALUE = 63.769 P VALUE = 0.000 (S)**				

GRAPH 29: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT KEEPING NATURAL TEETH IS NOT THAT IMPORTANT.

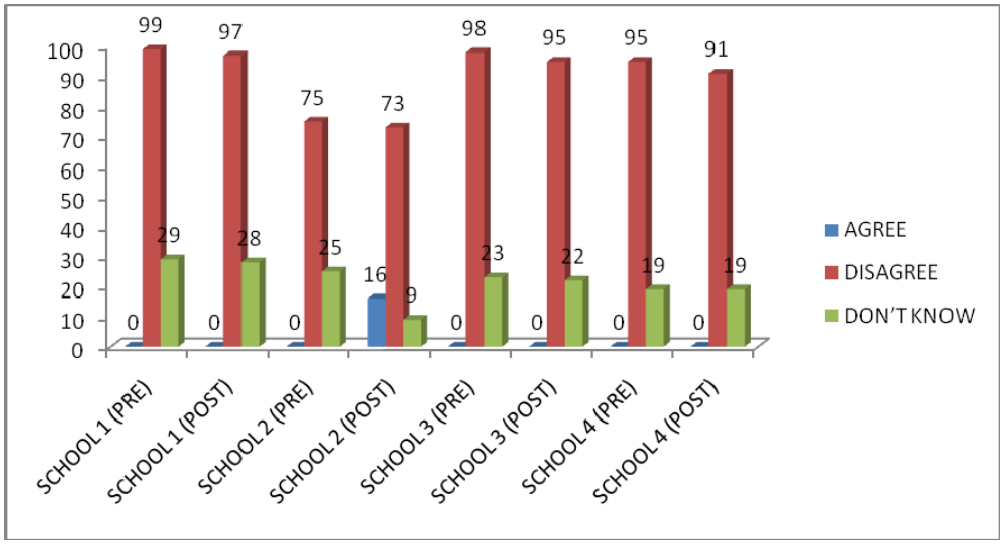


TABLE 30: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT THEY AVOID GOING TO A DENTIST BECAUSE OF THE POSSIBLE PAIN

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	84 65.6%	70 70%	85 70.2%	84 73.7%	323 69.8%		82 65.6%	89 90.8%	82 70.1%	80 72.7%	333 74.0%
DISAGREE	15 11.7%	10 10%	12 9.9%	10 8.8%	47 10.2%		15 12%	9 9.2%	12 10.3%	10 9.1%	46 10.2%
DON'T KNOW	29 22.7%	20 20.0%	24 19.8%	20 17.5%	93 20.1%		28 22.4%	0 0%	23 19.7%	20 18.2%	71 15.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.894 P VALUE = 0.929(NS)							PEARSON CHI SQUARE VALUE = 26.287 P VALUE = 0.000 (S)				

GRAPH 30: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT THEY AVOID GOING TO A DENTIST BECAUSE OF THE POSSIBLE PAIN

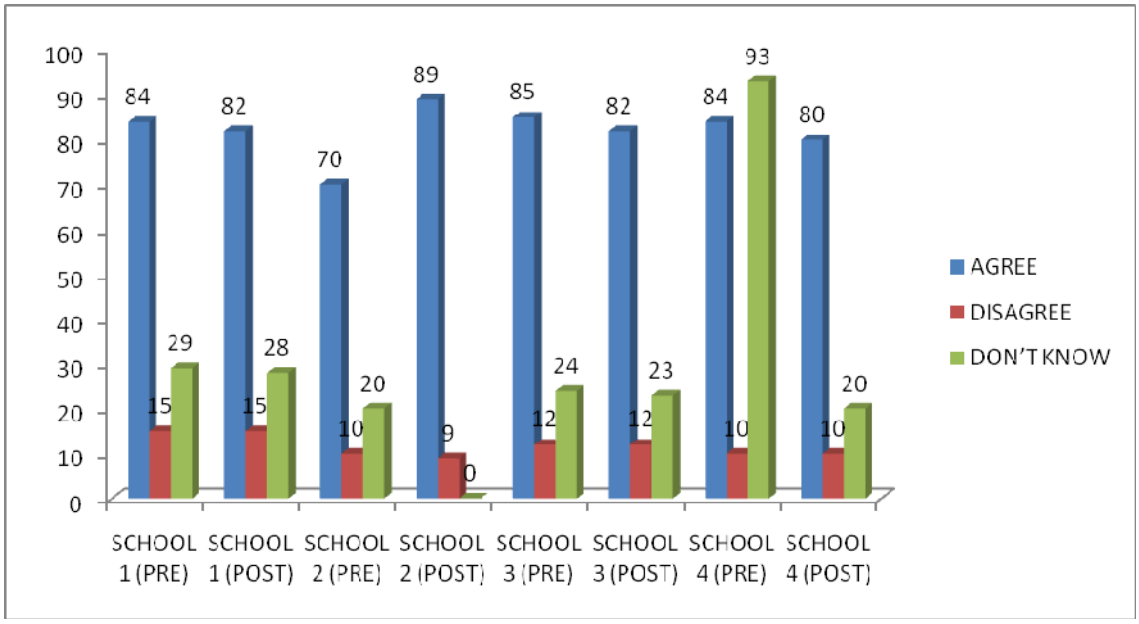


TABLE 31: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT REGULAR VISITS TO THE DENTIST KEEPS AWAY DENTAL PROBLEMS

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	121 94.5%	94 94.0%	111 91.7%	104 91.2%	430 92.9%		118 94.4%	92 93.9%	107 91.5%	100 90.9%	417 92.7%
DISAGREE	2 1.6%	2 2.0%	3 2.5%	3 2.6%	10 2.2%		2 1.6%	2 2.0%	3 2.6%	3 2.7%	10 2.2%
DON'T KNOW	5 3.9%	4 4.0%	7 5.8%	7 6.1%	23 5.0%		5 4%	4 4.1%	7 6%	7 6.4%	23 5.1%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.457 P VALUE = 0.962 (NS)							**PEARSON CHI SQUARE VALUE = 1.548 P VALUE = 0.956 (NS)**				

TABLE 32: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT BRUSHING TETH CAN PREVENT TOOTH DECAY

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	86 67.2%	67 67.0%	73 60.3%	74 64.9%	300 64.8%		84 67.2%	66 67.3%	69 59.0%	70 63.6%	289 64.2%
DISAGREE	1 0.8%	1 1%	1 0.8%	1 0.9%	4 0.9%		1 0.8%	1 1%	1 0.9%	1 0.9%	4 0.9%
DON'T KNOW	41 32.0%	32 32.0%	47 38.8%	39 34.2%	159 34.3%		40 32.0%	31 31.6%	47 40.2%	39 35..5%	157 34.9%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 1.667 P VALUE = 0.948(NS)							**PEARSON CHI SQUARE VALUE = 2.404 P VALUE = 0.879 (NS)**				

TABLE 33: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT EATING AND DRINKING SWEET THINGS DOES NOT CAUSE TOOTH DECAY

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	15 11.7%	11 11.0%	14 11.6%	16 14%	56 12.1%		15 12.0%	11 11.2%	14 12.0%	15 13.6%	55 12.2%
DISAGREE	54 42.4%	37 37%	35 28.9%	28 24.6%	154 33.3%		53 42.4%	36 36.7%	34 29.1%	25 22.7%	148 32.9%
DON'T KNOW	59 46.1%	52 52.0%	72 59.5%	70 61.4%	253 54.6%		57 45.6%	51 52.0%	69 59.0%	70 63..6%	247 54.9%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 10.578 P VALUE = 0.102 (NS)							**PEARSON CHI SQUARE VALUE = 12.124 P VALUE = 0.059(NS)**				

TABLE 34: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THAT USING FLUORIDE IS A GOOD WAY OF PREVENTING TOOTH DECAY

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
AGREE	12 9.4%	12 12.0%	19 15.7%	16 14.0%	59 12.7%		12 9.6%	12 12.2%	17 14.5%	15 13.6%	56 12.4%
DISAGREE	0 0%	0 0%	0 0%	0 0%	0 0%		0 0%	0 0%	0 0%	0 0%	0 0%
DON'T KNOW	116 90.6%	88 88.0%	102 84.3%	98 86.0%	404 87.3%		113 90.4%	86 87.8%	100 85.5%	95 86..4%	394 87.6%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 2.480 P VALUE = 0.479 (NS)							**PEARSON CHI SQUARE VALUE = 1.542 P VALUE = 0.673(NS)**				

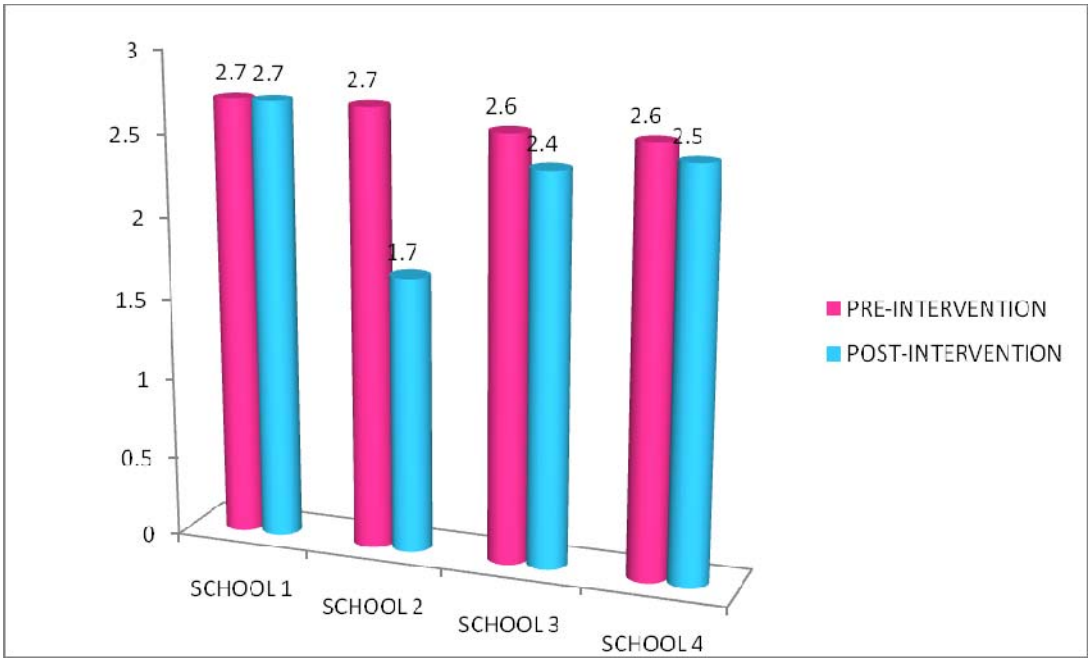
TABLE 35: DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR ASSESSMENT REGARDING THE SOURCE OF INFORMATION FROM WHICH DENTAL KNOWLEDGE IS ACQUIRED

	PRE INTERVENTION						POST INTERVENTION				
	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL		SCHOOL 1	SCHOOL2	SCHOOL3	SCHOOL4	TOTAL
FRIENDS	11 8.6%	7 7.0%	7 5.8%	7 6.1%	32 6.9%		11 8.8%	6 6.1%	6 5.1%	6 5.5%	29 6.4%
RELATIVES	11 8.6%	9 9.0%	13 10.7%	14 12.3%	47 10.2%		9 7.2%	9 9.2%	12 10.3%	13 11.8%	43 9.6%
TEACHERS	20 15.6%	17 17.0%	17 14.0%	12 10.5%	66 14.3%		20 16.0%	17 17.3%	16 13.7%	12 10.9%	65 14.4%
TELEVISION	63 49.2%	50 50.0%	67 55.4%	63 55.3%	243 52.5%		62 49.6%	49 50.0%	66 56.4%	62 56.4%	239 53.1%
PARENTS	10 7.8%	7 7.0%	6 5.0%	9 7.9%	32 6.9%		10 8.0%	7 7.1%	6 5.1%	8 7.3%	31 6.9%
RADIO	3 2.3%	2 2.0%	2 1.7%	1 0.9%	8 1.7%		3 2.4%	2 2.0%	2 1.7%	1 0.9%	8 1.8%
DENTISTS	10 7.8%	8 8.0%	9 7.4%	8 7.0%	35 7.6%		10 8.0%	8 8.2%	9 7.9%	8 7.3%	35 7.8%
TOTAL	128 100%	100 100%	121 100%	114 100%	463 100%		125 100%	98 100%	117 100%	110 100%	450 100%
PEARSON CHI SQUARE VALUE = 6.250 P VALUE = 0.995(NS)							**PEARSON CHI SQUARE VALUE = 7.299 P VALUE = 0.987 (NS)**				

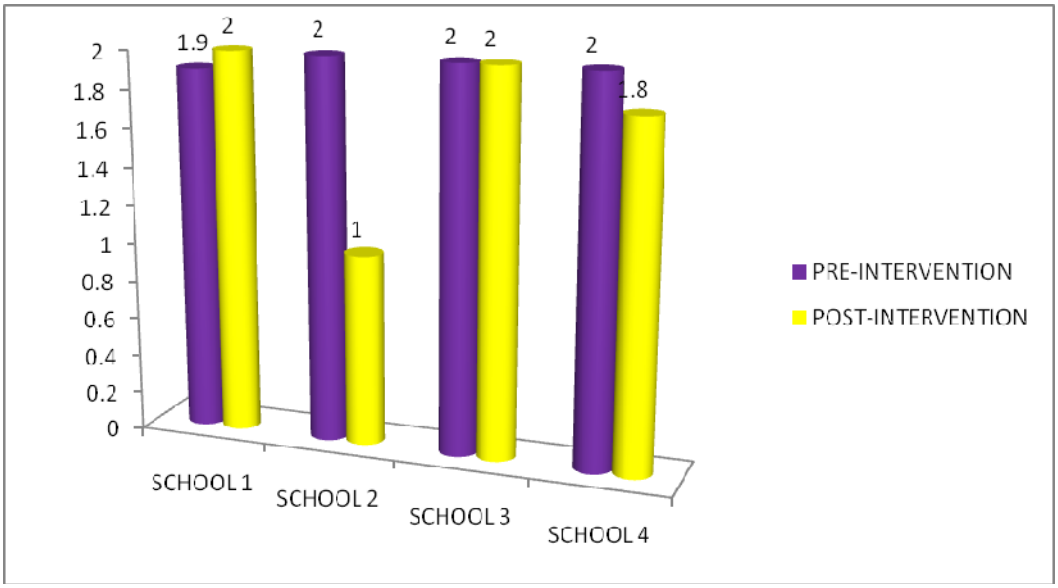
TABLE 36: THE DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR SCORES OBTAINED FROM ORAL HYGIENE INDEX -SIMPLIFIED, PLAQUE INDEX AND GINGIVAL INDEX

	PRE- INTERVENTION				POST- INTERVENTION			
	SCHOOL 1	SCHOOL 2	SCHOOL 3	SCHOOL4	SCHOOL1	SCHOOL2	SCHOOL3	SCHOOL4
OHI-s								
MEAN ± S.D	2.7±0.9	2.7±0.9	2.6±0.08	2.6±0.09	2.7±0.9	1.7±1.2	2.4±1.0	2.5±1.1
T VALUE	0.796	7.009	2.188	5.846				
P VALUE	0.428	0.000	0.031	0.000				
ANOVA	0.860				0.000			
PII								
MEAN ± S.D	1.9±0.5	2.0±0.5	2.0±0.4	2.0±0.4	2.0±0.04	1.0±0.03	2.0±0.04	1.8±0.04
T VALUE	-1.105	14.785	0.086	4.692				
P VALUE	0.136	0.000	0.931	0.000				
ANOVA	0.228				0.000			
GI								
MEAN ± S.D	1.3±0.03	1.4±0.36	1.4±0.03	1.4±0.03	1.4±0.03	1.3±0.03	1.4±0.03	1.3±0.03
T VALUE	-.167	-.221	0.091	-.145				
P VALUE	0.868	0.825	0.928	0.885				
ANOVA	0.990				0.980			

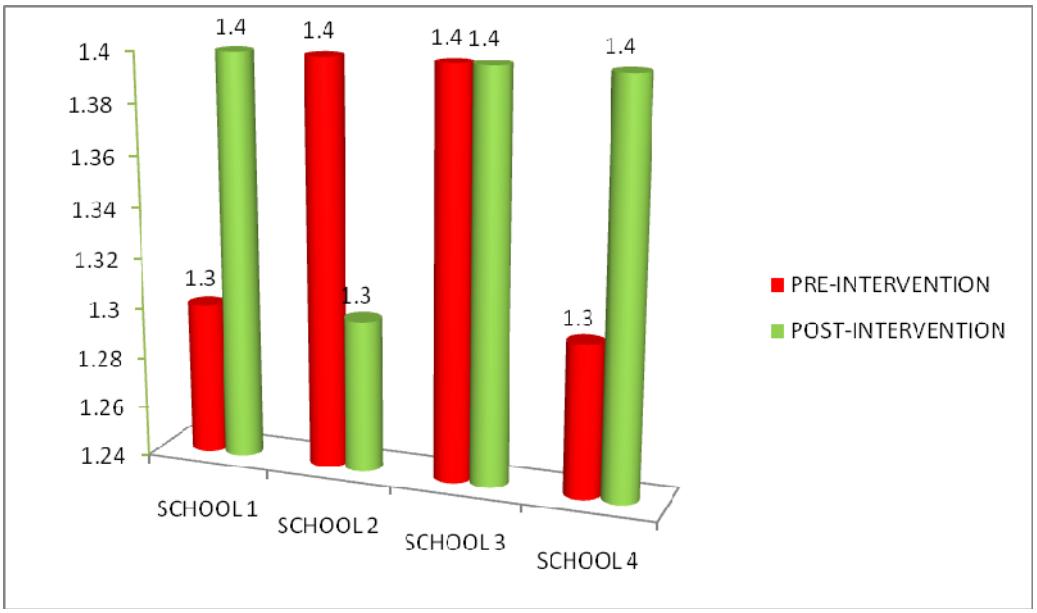
GRAPH 36 A: THE DISTRIBUTION OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR SCORES OBTAINED FROM ORAL HYGIENE INDEX –SIMPLIFIED



GRAPH 36 B: THE DISTRIBUTIONS OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR SCORES OBTAINED FROM PLAQUE INDEX



GRAPH 36 C: THE DISTRIBUTIONS OF THE STUDY POPULATION PRE AND POST INTERVENTION BASED ON THEIR SCORES OBTAINED FROM GINGIVAL INDEX



DISCUSSION

Oral health is an essential component of general health. According to Horowitz who was a pioneer in the field of dental health education and his co-workers felt that there is an association between oral cavity and the development of healthy personality, perceptions and the overall experiences of pleasure by the child.[47] However, millions of individuals suffer from dental caries and periodontal diseases, resulting in unnecessary pain; difficulty in chewing; swallowing and speaking problems suffered by the individuals. In addition to this there is increased medical costs leading to loss of economic productivity through lost working days. Particularly in children, untreated oral diseases frequently lead to serious general health problems, significant pain, interference with eating, and leading to learning disabilities. It is important that these disabled children also should be in a position to gain the knowledge and skills to maintain good health including oral health. In order to achieve this it is very important to inculcate oral health promoting habits in schools at the earliest by providing dental health education for school children. Due to advancement in dental science, today we are in a position to prevent and control most of the oral diseases of children by starting primary preventive programs at the earliest. An important method to achieve this is through dental health education[16]. School children are considered to be an important

target group for various health education activities with the underlying objective of inculcating healthy lifestyle practices to last for a lifetime as the children are young and highly receptive for educational methods .[8] They are like clay material making it easy to mould into desirable shapes. However there is a paucity of data about the study on effectiveness of various educational interventional methods among school children in India. Hence an attempt has been made in this study to assess the short term influence of health education using three types of health education methods on oral health of children. Hence the present study was designed as a community intervention trial to assess the effectiveness of three dental health education methods among 12-15 year old school going children of Kanchipuram district, Tamilnadu for a period of three months during February to May 2010. Four schools were selected for the study. The first school was considered as the control group whereas school 2 was imparted dental health education through audio visual aids. School 3 was provided dental health education through peer induced method and school 4 was imparted with dental health education through lecture method.

These three types of health education methods were selected for this study in order to investigate which method was more effective. Among them Conventional method of health education is usually done using lectures. Though lectures can educate people to a varieties of health problems, lectures are many a times are Socratic

in nature which is one way communication method and thus making two way communication not possible.

The effectiveness of using peers as a source of health education was also analysed in the present study. According to a study done by Laiho M et al[14], peers are an effective media for health education since the participants of the study felt free to interact with the peers and thus facilitating a two way communication.

Effect of Audio visual aids were also assessed in the study since they combined both audio and visual components to provide the dual advantage of both hearing and visualizing health related problems. Studies have shown a good acceptability by children when health education messages were conveyed through audio visual aids. Even among adolescents, Audio visual aids have been effectively used for creating awareness regarding prevention of AIDS and tobacco cessation programmes. In the present study audio visual aids were used for health education of children followed by an interactive session for clarification.

The assessment of the outcome of the present study was done using pretested questions pertaining to their perceived oral health status, behavior towards dental problems and past dental experiences, oral hygiene practices, dietary history, adverse habits and oral health knowledge and attitude in the pre intervention phase followed by assessment of Oral Hygiene Index simplified, Plaque index and Gingival index. These questions and indices were again

assessed after the end of the study. Flanders et al stated that many measures are used to determine the success of health education, dental ill health is related directly to an individual and hence the parameters of success or failure should be measured with indices which will truly reflect behavioural change. Hence in this present study the three indices namely oral hygiene index simplified, plaque index and gingival index were used. Moreover in the present study, visits were made on a monthly basis. At each of these visits the oral health education was reinforced to the test groups. Willford et al[48] stated in his study that repetition and reinforcement of oral hygiene instructions were found to be significantly improving oral hygiene status. Zaki et al [49]concluded that a single session of motivational activities does not alter oral hygiene performance. Hence monthly reinforcements were conducted to the experimental groups between the three months of study period.

PERCIEVED ORAL HEALTH STATUS:

Students from school 2 expressed better satisfaction when compared to the other school children with regard to the satisfaction attained due to the appearances of their teeth and gums. This finding was similar to the finding of Zakhi et al[49]. Since audio visual aids give a better picturisation of the health and oral health related problems, students would be able to picturise certain conditions that cannot be understood just by lectures. This might be a possible reason why students of school 2 expressed better

satisfaction with regard to the appearance of their teeth and gums. Regarding the assessment of their avoidance towards smiling and laughing and their assessment for the fun that is made by other students because of their teeth, there was no significance difference in the responses obtained both in the pre intervention and post intervention. However there existed a significant difference in the assessment of the study population regarding the advice that they would get if they would have met a dentist. In the pre intervention the response of all the students were that they were unaware of what a dentist would advice them but in the post intervention there existed an increase in their knowledge about the advice that would be rendered by a dentist. The responses from the school with audio visual aids had maximum number of students who were aware of the advice. Hence the significant difference in the post intervention could be due to the health education through audio visual methods. All other schools had the same number of respondents as in the pre intervention. The overall perceived oral health status of the students had a positive increase from the pre intervention to the post intervention. There was a definite contribution by the audio visual aids which was used as a tool of health education in increasing the perceived oral health status of the study population. A similar study by Worthington HV [26]concluded that the usage of audio visual aids in dental health education is beneficial in increasing the perceived oral health status of the ten year old school children.

BEHAVIOR TOWARDS DENTAL PROBLEMS AND PAST DENTAL EXPERIENCES

Majority of the students at the baseline from all the schools expressed that they have not met a dentist (88.3%) in their lifetime and dental visits of the remaining students were less frequent which was similar to a study by Varenne et al [50]. The reluctance of the population in meeting a dentist might be due to the lack of availability of specialized dentists, lack of money to pay for the dental treatment, misconceptions about dental treatments etc. This was in contrast to high dental visits reported by and Wierzbicka et al[51]. Fear of dental treatment was found to be high among the study population .In the post intervention phase there was no significant change between the schools regarding the behavior towards dental problems and past dental experience.

ORAL HYGIENE PRACTICES

In this study it was found that only 3.5% students brush their teeth two or more times a day. This was in contrast to a study by Zhu et al[52] where only 44.4% study population brushed twice or more times a day. In the post intervention there was no significant difference among the schools regarding frequency of brushing their teeth. When enquired about whether they use tooth paste containing fluoride, 94% of students answered that they were unaware about fluorides in their tooth pastes. However there was a significant difference in the responses of the students in the post intervention.

The response of school 2 students were better compared to the responses of the other schools. This finding maybe due to the capacity of students to learn better from visual projections of the benefits of fluoride in corporation in tooth pastes. Moreover the same students from school 2 also indulged in using dental floss as an inter dental aid in the post intervention phase, compared to the pre intervention phase where all the students responded that they did not use any inter dental aid in cleaning their teeth. This change might be due to the capacity of students from school 2 to learn better from visual projections of dental health education and preventive procedures.

DIETARY HISTORY

In the pre intervention, high proportion of participants reported having hidden sugars everyday in their diet. (soft drinks- 54.4% ; milk with sugar- 84.2%; tea with sugar- 60.9%) which was high compared to a study by Peterson et al.[53] Their consumption of sweets everyday was also higher (86.6%) similar to a study by El-Quareli et al[54]. There was no significant difference among the schools in the post intervention phase regarding their dietary history.

ADVERSE HABITS

In the pre intervention phase all the students were asked about their tobacco usage either in the smoking form or in the chewing form. There was no positive response obtained neither in

the pre intervention phase nor in the post intervention phase. This interesting finding maybe due to the reluctance of the students towards answering this question due to fear of getting caught with their elders and teachers. Since the area of study was a culturally conservative district, and people there consider smoking among adolescents as a taboo, hence this response might not be valid.

ORAL HEALTH KNOWLEDGE AND ATTITUDE

Approximately 53.8% of study population were aware that carious teeth can affect their dental esthetics in the pre intervention phase. This was very less compared to the study by Al Omiri (77%)[55]. Awareness of the importance of tooth brushing for caries prevention was moderate (64.8%) among the study population. This finding was similar to a study by Varenne et al[51] where majority of students in rural areas reported that tooth cleaning and regular dental visits may prevent oral diseases. Among the study population, 54.6% students were not aware whether consumption of sugary products might cause tooth decay which was similar to a study by Varenne et al (57%).[51] The caries preventive effect of fluoride was not realized by a substantial population of students (87.3%). Only 12.7% students correctly identified the action of fluoride as preventing tooth decay which was similar to a study by Wyne et al[56]. Similarly though students had positive attitude towards their dentist, they indicated that they feared dental treatment. Although 92.9% students were aware of the importance

of regular dental visits, only 11.7% of the study population reported that they have visited a dentist in their life time. This finding was consistent with the findings of Al Omiri et al.[56] A surprising finding in this regard was that most participants were aware of the importance of regular dental visits. Fear of dentist was the main cause of irregular or not visiting a dentist (69.8%). This was very high compared to a study by El-Qaderi et al[55]. The study participants from the pre intervention phase received information regarding oral health mainly from television (52.5%). This finding agrees with the findings of the study by Jamjoum.[57] In contrast to this, in a previous study by Varenne et al [51], many students living in rural areas received oral health information from their parents. The reason for increased dissemination of knowledge through mass media might be due to better access and reach of various mass media methods (like TV's) among the Indian student population.

INFLUENCE OF THE ORAL HEALTH STATUS

The oral hygiene index simplified (OHI-s) was used to assess the efficiency of oral hygiene practices of the study population. A similar study was conducted by Podshadley AG [58] in which oral hygiene performance of elementary school students were increased following dental health education. At the baseline all the schools had a score of 2.7± 0.9 , 2.7±0.9, 2.6±0.08 and 2.6± 0.09. After the end of the interventions, the scores of school 1 which was the control did not vary. However school 2 showed a reduction in its

scores (1.7± 1.2) followed by school 4 (2.5± 1.1). In a similar study by Flanders RA,[59] there was a similar reduction in the OHI-s scores followed by health education through video cassette projection of oral health education.

When assessing the scores that were used to reflect plaque accumulation ie PII, it was seen that there was a reduction in the mean plaque scores at the end of the interventions. Studies by Anaise et al [60] showed significant reductions in the plaque scores following oral health education. Thus scores in the present study decreased after interventions from 2.0 ± 0.5 to 1.0 ± 0.03 in school 2 and from 2.0 ±0.4 to 1.8 ±0.04 in school 4. The scores of school 3 was unaltered in pre and post interventions. Thus there existed a significant difference in the plaque scores between pre and post interventions in school 2 and school 4 respectively. Similar results were observed in a study conducted by Thomas S et al.[61]

When comparing the mean gingival scores in the present study, a reduction in the mean score was noted in school 2 from 1.4 ± 0.36 to 1.3 ± 0.03 and in school 4 from 1.4 ± 0.03 to 1.3 ± 0.03. There was no alteration in the GI scores of school 3 where it was 1.4 ± 0.03. Even though there was no significant difference in the scores obtained from the pre and post interventions, a positive shift was observed in the reduction of gingival scores in the post interventions. This finding was in contrast to a study by Thomas S et al [61] where the study population showed a significant difference in the gingival scores after oral health education was imparted.

Overall among the study population, the computer based power point projection using a LCD screen method was the most effective method in improving oral health knowledge of study subjects. The more school children discuss, communicate or are exposed to the media concerning a particular issue, the more their behaviour seems to be influenced . The computer might have led to this increased interest, discussion and communication among the study subjects regarding their oral health. In a similar study conducted by Rong WS et al [62], a statistically significant improvement in the knowledge status of parents of three year old school children was reported with the use of video and audio tape supplemented by picture as compared with those in the control group.

Lecture talk method by the dentist was the second most effective method for improving the oral health knowledge of study subjects. In a similar study conducted by Laiho M et al [63] , the investigator suggested that the encouraging effect of the traditional oral health education might be due to the fact that the investigator consciously uses encouraging and persuasive language. But since the mode of delivery is Socratic rather than didactic, the students might have lost considerable interest after a point of time.

The Health Education induced by the Peer Influenced was the third most effective method for improving the oral health knowledge of the study subjects. Laiho et al[63] conducted a study to assess the effect of peer education among 5-6 year old school children in

Northern Ireland. In contrary to the results of his study in which both boys and girls showed significant improvement in oral health, in this study there was no statistically significant difference in the pre and post interventions. The reason may be that since the peer was selected from the same school, the students could not accept her as a health educator. Moreover in our society age of the educator plays a vital role rather than the message that is delivered. Since the peer was only four years elder than the study population, the students must have not concentrated keenly on the message she tried to deliver.

The computer based power point projection using a LCD screen method and the Lecture talk method by the dentist were the only methods that reduced the plaque and gingival index scores of the study subjects. The results also reveal that both these methods were equally effective in reducing the debris, calculus and Plaque index scores of the study subjects. Gains in the oral health knowledge were translated into gains in the oral health status as these two methods were able to generate interest, discussion and communication in the study subjects. In a similar study conducted by Zaki H.A. et al [50] a sound and slide synchronizing machine resulted in a significantly greater improvement in the oral hygiene status than the conventional teaching method. Rong WS et al [63] observed greater reported tooth brushing habits by using video and audio tape supplemented by pictures as compared to the control group.

SUMMARY

Oral health is an inseparable part of general health. Usually people tend to neglect their oral health. In case of children if parents ignore to take proper care of the children, it becomes still worse and the children may become dentally crippled. The dental treatment module for children is a triangle in which child as a patient and dentist and the parent all the three are involved in the outcome of successful dental treatment of children. Hence the oral health of children is a significant public health issue.[9] .Oral diseases are one of the most diet and behavior related diseases. If primary preventive steps are not taken at early stages, the secondary and tertiary preventive steps of dental diseases becomes costly, time consuming and requiring specialist care. Adverse dental experience during childhood may lead to dental phobia, influencing negatively on attitudes to avail oral health care as well as dental visiting behaviours of children for their remaining life time. Prevention, early diagnosis and prompt treatment are therefore crucial in order to contain the costs of dental treatments. Even though oral health is very much a part of overall health, little attention is paid to this aspect of health. Health education, a part of primary prevention, is one of such a key to provide dental health services both to individuals and groups. Dental health education is considered to be an important and integral part of dental health care services.[17] But

the effectiveness in these various methods of health education are still under research stage and hence this study was designed to assess the effectiveness of various health education methods among 12 – 15 year old school going children in Kanchipuram District, Tamil nadu which is a rural area, where majority of the people belong to low economic status and their utilization of dental care is minimum. The effectiveness of three different health education methods namely (1) Audio Visual projection (2) Lecture method by the peer (3) Lecture method by dentist were assessed in this study using a community intervention trial design. The trial design had three test arms for the three types of health education and one school acted as control. Out of the 180 government schools, four schools were randomly selected for the present study. The total number of students participated in the study were 463.All of them were in the age group of 12 to 15 years. All students were provided with a self administered closed ended pretested questionnaire comprising of demographic data and 19 questions involving their perceived oral health status, behavior towards dental problems and past dental experiences, oral hygiene practices, dietary history, adverse habits and oral health knowledge and attitude. After obtaining the answers for the questionnaires by the subjects , the questionnaires were collected by the principal investigator for analysis. The oral health status was assessed using the three indices namely Oral Hygiene Index Simplified (OHI-S), 1964, Plaque Index

by Sillness and Loe (PII), 1964 and Gingival Index by Loe and Sillness, (GI)1963.

The duration of the study was three months ie from February 2010 till June 2010.Monthly reinforcement of health education was given to all the students except the control group. The reinforcement consisted of repeating the same procedure of visual projections for the second school at one month intervals. Likewise lecture by peer was instilled to the third school and lecture by dentist for the fourth school respectively. At the end of three months the same pre tested self administered closed ended questionnaire was distributed among the same students and the filled forms were collected and statistically analyzed .The findings are as follows:

- The overall perceived oral health status of the students had a positive increase from the pre intervention to the post intervention.
- There was a definite contribution by the audio visual aids which was used as a tool of health education in increasing the perceived oral health status of the study population.
- Majority of the students at the baseline from all the schools expressed that they have not met a dentist (88.3%) in their lifetime and dental visits of the remaining students were less frequent.

- Fear of dental treatment was found to be high among the study population.
- This study found that only 3.5% students brush their teeth two times a day.
- When enquired about whether they use tooth paste containing fluoride, 94% of students answered that they were unaware about fluorides in their tooth pastes. However there was a significant difference in the responses of the students in the post intervention
- Only the students from school 2 indulged in using dental floss as an inter dental aid in the post intervention phase, compared to the pre intervention phase where all the students responded that they do not use any inter dental aid in cleaning their teeth.
- High proportion of participants reported having consuming sugars everyday (soft drinks- 54.4%; milk with sugar- 84.2%; tea with sugar- 60.9%). Their consumption of sweets everyday was also higher (86.6%).
- All the students were reluctant in responding to their usage of tobacco products due to fear of getting caught with their elders and teachers. Since the area of study is a culturally conservative district and people there consider adolescent smoking as a taboo, hence this type of negative response might have been given.

- In the post intervention phase, particularly in school 2 students, an increase in their oral health knowledge and attitude was noticed. A significant difference was noticed in their awareness regarding dental caries and dental esthetics, their awareness towards retaining natural teeth and their reluctance in visiting a dentist due to possible pain. In all other schools no significant difference was noticed in the post intervention phase.
- The oral hygiene index simplified (OHI-s) was used to assess the efficiency of oral hygiene practices of the study population. At the baseline all the schools had a score of 2.7± 0.9, 2.7±0.9, 2.6±0.08 and 2.6± 0.09. After the end of the interventions, the scores of school 1 which was the control did not vary. However school 2 showed a reduction in its scores (1.7± 1.2) followed by school 4 (2.5± 1.1).
- When assessing the scores that were used to reflect plaque accumulation ie PII, it was seen that there was a reduction in the mean plaque scores at the end of the interventions. Thus scores in the present study decreased after interventions from 2.0 ± 0.5 to 1.0 ± 0.03 in school 2 and from 2.0 ±0.4 to 1.8 ±0.04 in school 4. The scores of school 3 was unaltered from 2.0 ± 0.4 in pre and post interventions. Thus there existed a significant difference in the plaque scores between pre and post interventions in school 2 and school 4 respectively.

- When comparing the mean gingival scores in the present study, a reduction in the mean score was noted in school 2 from 1.4 ± 0.36 to 1.3 ± 0.03 and in school 4 from 1.4 ± 0.03 to 1.3 ± 0.03. There was no alteration in school 3 where it was 1.4 ± 0.03. Even though there was no significant difference in the scores obtained from the pre and post interventions, a positive shift was observed in the reduction of gingival scores in the post interventions.
- Overall among the study population, the computer based power point projection using a LCD screen method was the most effective method in improving oral health knowledge of study subjects.
- The behavior of the children seems to be influenced by their exposure to media concerning particular issues and the information they discuss and communicate to each other in the school.
- The influence of computer might have lead to this increased interest, discussion and communication among the study subjects regarding their oral health.
- Lecture method by the dentist was the second most effective method for improving the oral health knowledge of study subjects.

- The Health Education induced by the Peer Influenced was the third most effective method for improving the oral health knowledge of the study subjects
- The computer based power point projection using a LCD screen method and the Lecture method by the dentist were the only methods that reduced the plaque and gingival index scores of the study subjects.
- The results also reveal that both these methods were equally effective in reducing the debris, calculus and Plaque index scores of the study subjects. Benefits in the oral health knowledge were translated into gains in the oral health status as these two methods were able to generate interest, discussion and communication in the study subjects.

CONCLUSION

India is a country with immense and vast resources and manpower. But the dental health professionals are still confronted with the problem of meeting the dental needs of the rural sector which constitutes the bulk of the population. The reasons may be numerous ranging from inadequate infrastructure, high illiteracy rate, social and cultural beliefs to political factors where there is no separate allocation of funds for dental health. This calls for adopting suitable strategies in combating these problems. Moreover adolescents are the future adults of any population. In India they constitute the bulk of the rural population. It is estimated that India will be the global leader in young adult population by the year 2050.Hence the health of adolescents is mandatory in which oral health plays a pivotal role. It is now realized that working in isolation is not the best way forward. Involving suitable strategies which concentrate on primary prevention will help in reducing the overall costs spent on secondary and tertiary prevention. Health education is one such modality which is the basis of primary prevention. To impart this health education, it is necessary to find out which method of health education is most effective. Hence this study was intended to assess the most efficient dental health education method among three dental health education methods. In the present study it was found that the audio visual method of dental

health education was the most efficient and effective method compared to the lecture method of dental health education and peer induced method of dental health education. Hence incorporating this method in imparting dental health education may create a new renaissance in the dental health education scenario in India. Moreover further researches and refinements are needed regarding this field of dental health education. Dental health professionals should be keen and try to explore more in this entity of primary prevention. It may lead to better results in this field. The work of a public health professional never ceases. It has been aptly pointed out by Park that the work of a health professional is like that of a gardener or a farmer that their work will never become complete and that they will have to keep on doing it continuously.

RECOMMENDATIONS

- Despite the vast resources and manpower that India has, the dental health professionals, are still confronted with the problem of meeting the dental care needs of the rural people who constitute the bulk of the population. The reasons may be
  - Inadequate infrastructure
  - High illiteracy rate
  - Social and cultural beliefs of the rural people
  - Indifferent attitude of politicians to develop Rural areas
- Moreover there is no separate allocation of funds for dental health alone in the annual budget proposed by the government of India. This calls for adopting suitable strategies in solving these problems.
- Hence a preventive strategy emphasizing primary preventive measures should be created at schools targeting school children at national and state level.
- Even teachers, if motivated by the dental health professionals can be effective. They can be used as a priority group in rural health education campaigns.
- School teachers can be used to implement sound oral health promotion campaigns and good oral health practices among children.

- Therefore coordinated efforts need to be made between school administrative authorities, government and private managements, school teachers, school children and dental health educators to facilitate and achieve long term results.
- More emphasis should be given to changing the habit of high consumption of sugary foods and drinks by school children in home as well near school premises.
- Avoid giving licenses to sell fast foods near schools.
- Oral health education topics should be integrated in the general school curriculum in a phase manner.
- Further refinements in the implementation of the oral health education programs might lead to better results.

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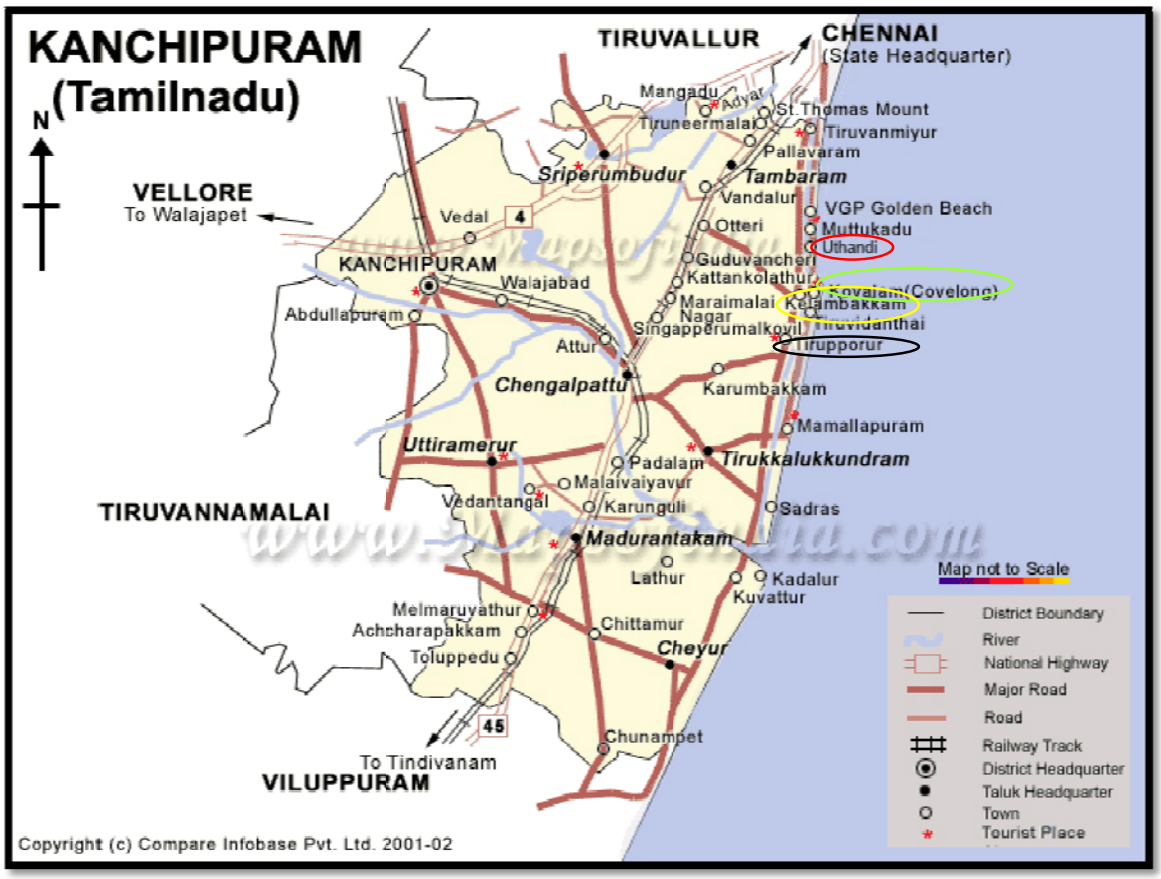
MAP OF KANCHIPURAM DISTRICT, TAMIL NADU



SCHOOLS THAT PARTICIPATED IN THE STUDY

SCHOOL 1

GOVERNMENT HIGHER SECONDARY SCHOOL,KOVALAM,

KANCHIPURAM DISTRICT

SCHOOL 2

GOVERNMENT HIGHER SECONDARY SCHOOL,UTHANDI,

KANCHIPURAM DISTRICT

SCHOOL 3

GOVERNMENT HIGHER SECONDARY SCHOOL,THIRUPORUR,

KANCHIPURAM DISTRICT

SCHOOL 4

GOVERNMENT HIGHER SECONDARY SCHOOL,KELAMPAKKAM,

KANCHIPURAM DISTRICT

PERMISSION LETTER OBTAINED FROM THE PRINCIPAL, RAGAS DENTAL COLLEGE & HOSPITAL, CHENNAI

RAGAS DENTAL COLLEGE & HOSPITAL
(Unit of Ragas Educational Society)
Recognized by the Dental Council of India, New Delhi
Affiliated to The Tamilnadu Dr. M.G.R. Medical University, Chennai
2/102, East Coast Road, Uthandi, Chennai - 600 119. INDIA.
Tele : (044) 24530002, 24530003-06. Principal (Dir) 24530001 Fax : (044) 24530009

To

The Chief educational officer

Kanchipuram district

Tamilnadu

Sir

This is to certify that Dr. J. E. Nijesh is a bonafide second year MDS (Public Health Dentistry) student of this college. He is doing his main dissertation on 'Effectiveness of Various health education methods among 12 - 15 year old school going children in Kanchipuram District - A community interventional study'. Since he needs to examine school going children in Government Higher Secondary Schools in Kanchipuram District, I will be thankful if you give him the necessary permission to proceed in his final dissertation.

Thanking you,

Yours sincerely,

Date: 20.11.09

(Dr. S. RAMACHANDRAN)
PRINCIPAL
PRINCIPAL
RAGAS DENTAL COLLEGE & HOSPITAL
CHENNAI

PERMISSION LETTER OBTAINED FROM THE CHIEF EDUCATIONAL OFFICER,

KANCHIPURAM DIST.,TAMIL NADU

C.Ramanathan

CEO

Kancheepuram Dist

Proceedings of the chief educational officer, kancheepuram Dist

Pdl 1/10 Dated:22.01.2010

Sub:- Education – Permission to attended the project works at schools

Ref:- Application Dated 20.1.2010 of the individual concerned

---

Dr. J.E.Nijesh, post graduate student, ragas dental college, chennaiis permitted to do his project work in the schools enclosed in the list

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Encl:- List of Schools

To,

Concerned Headmaster

Copy to district elementary education officer , Kancheepuram dist

PROFORMA

Name			**Age**
Sex			**Standard**
Name of School			
Oral Hygiene Index - Simplified(OHI-S)			
Debris Index Simplified - DI-S			
16	11	26	
46	31	36	
Calculus Index Simplified -CI - S			
16	11	26	
46	31	36	
Good			
Fair			
Poor			

Plaque Index - PII(Silness & Loe, 1967)

16			12			24		
44			32			36		

Score

Gingival Index (GI -Loe and Silness, 1963)

16			12			24		
44			32			36		

Score

QUESTIONNAIRE

EFFECTIVENESS OF VARIOUS HEALTH EDUCATION METHODS AMONG 12-15 YEAR OLD SCHOOL GOING CHILDREN IN KANCHIPURAM DISTRICT – A COMMUNITY INTERVENTIONAL STUDY

DR. J.E. NIJESH
2ND YEAR POST GRADUATE STUDENT
DEPARTMENT OF PUBLIC HEALTH DENTISTRY
RAGAS DENTAL COLLEGE & HOSPITAL
CHENNAI – 600 119

NAME OF THE SCHOOL:
gs;spapd; bgah;

ROLL NUMBER OF THE STUDENT:
khzth; vz;/

SEX: MALE/FEMALE
,dk; ? Mz;-bgz;

AGE:
taJ

CLASS:
tFg;g[

WHAT IS THE COLOUR OF THE RATION CARD YOU USE AT HOME?

(A) WHITE (B) PINK (C) YELLOW (D) GREEN (E) DON'T KNOW

jh';fs; ,y;yj;jpy; cgnahfpf;Fk; nurd; fhh;l;od; epwk; vd;d?

(m) bts;is (M) nuh!; (,) k";rs; (<) gr;ir (c) bjhpahJ

1. **HOW WOULD YOU DESCRIBE THE HEALTH OF YOUR TEETH AND GUMS?**
   j';fs; thapd; Mnuhf;fpaj;ij eP';fs; vt;thW tpthpg;gPh;fs; **?**

	TEETH / gw;fs;	**GUMS /** <Wfs;
EXCELLENT /rpwg;ghf cs;sJ		
VERY GOOD / kpf ed;whf cs;sJ		
GOOD / ed;whf cs;sJ		
AVERAGE / Rkhuhf cs;sJ		
POOR / nkhrkhf cs;sJ		
VERY POOR / kpf nkhrkhf cs;sJ		
DON'T KNOW		

2. **DURING THE PAST 12 MONTHS DID YOU HAVE TOOTH ACHE OR FELT DISCOMFORT ON ACCOUNT OF YOUR TEETH?**

   fle;j xU tUlj;jpy; gy;typnah ntW tha; rk;ke;jg;gl;l gpur;ridnah j';fSf;F te;jjh

   A. YES / Mk;

   B. NO / ,y;iy

3. **ARE YOU SATISFIED WITH THE APPEARANCE OF YOUR TEETH?**
   j';fs; gw;fspd; jw;nghija njhw;wk; c';fSf;F kdepiwt[mspf;fpwjh**?**

   A. YES / Mk;

   B. NO / ,y;iy

4. **DO YOU AVOID SMILING AND LAUGHING BECAUSE OF YOUR TEETH?**
   eP';fs; c';fs; gw;fspdhy; kw;wthplk; rphpf;fhkYk; tha;tpl;L ngrhkYk; ,Uf;fpwPh;fsh**?**

   A. YES / Mk;

   B. NO / ,y;iy

5. **DO OTHER CHILDREN MAKE FUN OF YOUR TEETH?**
   kw;w khzth;fs; c';fs; gw;fis fz;L nfyp bra;fpwhh;fsh**?**

   A. YES / Mk;

   B. NO / ,y;iy

6. **DURING THE PAST 12 MONTHS DID TOOTHACHE OR DISCOMFORT CAUSED BY YOUR TEETH FORCED YOU TO MISS CLASSES?**
   fle;j xU tUlj;jpy; gw;fspdhy; Vw;gl;l typahnyh my;yJ gy; rhh;e;j gpur;ridahnyh gs;sp tFg;g[fis jtw tpl;Oh;fsh**?**

   A. YES / Mk;

   B. NO / ,y;iy

8. **IF YOU WERE TO GO TO DENTIST NOW WHAT DO YOU THINK HE/SHE WOULD ADVICE YOU?**

,d;W eP';fs; gy; kUj;Jtiu mDfpdhy; mtUila mwpt[iu c';fSf;F vd;dthf ,Uf;Fk;

YES	NO	DON'T KNOW
	Mk;	,y;iy bjhpahJ

THE DENTIST WOULD SAY mth; TWthh;

1. **YOU HAVE TO BRUSH YOUR TEETH BETTER**
   eP';fs; gw;fis ed;whf Jyf;f ntz;Lk;

7. **CALCULUS HAS TO BE REMOVED**
   gy;ypy; cs;s fhiw mfw;wg;gl ntz;Lk;

8. **YOU NEED FILLING**
   ghjpf;fg;gl;l gy; milf;fg;gl ntz;Lk;

9. **YOUR TEETH HAS TO BE REMOVED**
   ghjpf;fg;gl;l gy; ePf;fg;gl ntz;Lk;

8. **HAVE YOU VISITED THE DENTIST DURING LAST 12 MONTHS**
   fle;j xU tUlj;jpy; gy; kUj;Jtil mDfpzPh;fsh**?**

A. YES / Mk;

B. NO / ,y;iy

10. **WHAT WAS THE REASON FOR YOUR LAST VISIT TO THE DENTIST?**
filrpahf gy; kUj;Jtiu mDf vd;d fhuzk; **?**

1. **PARENTS HAD MADE AN APPOINTMENT**
   bgw;nwhh;fspd; tw;g[Wj;jypdhy; brd;nwd;/
2. **APPOINTMENT INITIATED BY THE DENTIST**
   gy; kUj;Jtnu tu brhd;dhh;
3. **I TOLD MY PARENTS TO TAKE ME TO DENTIST**
   ehnd bgw;nwiu miHj;J nghf brhd;ndd;

11. **TREATMENT UNDERGONE DURING LAST VISIT**
vd;d tifahd gy; kUj;Jtk; j';fSf;F brd;w Kiw tH';fg;gl;lJ/

	YES	NO
	Mk;	,y;iy
FILLING	gy; milj;jy;	
CLEANING	gy; Rj;jk; bra;jy;	
EXTRACTION	gy; vLj;jy;	
CHECK UP	gy; Ma;t[bra;jy;	

12.**WHO WENT WITH YOU FOR YOUR LAST VISIT TO THE DENTIST?**

1. MOTHER	mk;kh
2. FATHER	mg;gh
3. BROTHER	rnfhjuh;
4. FRIENDS	ez;gh;fs;
5. BOTH THE PARENTS	bgw;nwhh; ,UtUk;

12. How often do you brush your teeth?

vj;jid Kiw gy; Jyf;FtPh;fs;

1. Once a day

xh; ehspy; xU Kiw

2. Two or more times a day

xh; ehspy; ,U Kiw

3. Once a week

xh; thuj;jpy;; xU Kiw

4. 2-3 times a month

xU khjj;jpy; ,uz;L K:d;W Kiw

5. Never

,y;ynt ,y;iy

13. Do you use tooth paste containing fluoride?

eP';fs; g[nshiuL gw;gir cgnahfpf;wPh;fsh

1. Yes	Mk;
2 . No	,y;iy
3. Don't know	bjhpahJ

14. Do you use any of the following to clean your teeth:

eP';fs; fPnH bfhLf;fg;gl;oUf;Fk; VjhtJ xd;wpid gy; Rj;jk; bra;a cgnahfpg;gpw;fsh**?**

1. Dental floss	blz;ly; gpsh!;
2 Charcoal	fhpj; Jz;L
3 Chew stick	gy; Fr;rp
4. Plastic tooth picks	gpsh!;of; gy; Fj;Jk; Fr;rp
5. Others	ntW VjhtJ

15. HOW OFTEN YOU TAKE ANY OF THE FOLLOWING?

vj;jid Kiw jh';fs; fPH; bfhLf;fg;gl;oUf;Fk; bghUl;fis cz;gPh;fs;

FRESH FRUITS	gH tiffs;
SOFT DRINKS	nrhlh nfhyh
SWEETS	,dpg;g[tiffs;
MILK WITH SUGAR	rf;fiu ghy;
TEA, COFFEE WITH SUGAR	rf;fiu nrh;j;j O. fhgp

16. HOW OFTEN DO YOU SMOKE CIGARETTES, PIPES OR CIGARS ?

vg;bghGbjy;yhk; eP';fs; g[if gpog;gPh;fs;

1. **NEVER** ,y;ynt ,y;iy
2. **EVERY DAY** jpdKk;
3. **AT LEAST ONCE A WEEK** thuj;jpy; xU Kiw
4. **SEVERAL TIMES A MONTH NEVER** khjj;jpy; gy Kiw

17. HOW OFTEN DO YOU USE CHEWING TOBACCO OR SNUFF ?

vg;bghGbjy;yhk; eP';fs; bky;yk; g[ifapiyia cgnahfpg;gPh;fs;

1. **NEVER** ,y;ynt ,y;iy
2. **EVERY DAY** jpdKk;
3. **AT LEAST ONCE A WEEK** thuj;jpy; xU Kiw
4. **SEVERAL TIMES A MONTH NEVER** khjj;jpy; gy Kiw

18. PLEASE TELL WHETHER YOU AGREE OR DISAGREE WITH THE FOLLOWING

fPnH bfhLf;fg;gl;oUf;Fk; fUj;Jfis eP';fs; Mnkhjpf;fpwPh;fsh my;yJ vjph;fpwPh;fsh

	AGREE	DISAGREE	DON'T KNOW
	Mnkhjpf;fpnwd;	vjph;fpnwd;	bjhpahJ
1. TEETH DECAY CAN MAKE ME LOOK BAD			
gy;brhj;ij vd; mHif ghjpf;Fk;			
2.KEEPING NATURAL TEETH IS NOT THAT IMPORTANT			
,aw;if gw;fs; mt;tst[Kf;fpakhdit my;y			
3.I AM AFRAID OF GOING TO DENTIST BECAUSE OF POSSIBLE PAIN			
gy; typ tUnkh vd;W fUjpna ehd; gy; kUj;Jtiu re;jpg;gij jtph;g;ngd;/			
4.REGULAR VISITS TO THE DENTIST KEEP AWAY DENTAL PROBLEMS			
gy; kUj;Jtiu tHf;fkhf re;jpj;jhy; gy; gw;wpa gpur;ridfspy; ,Ue;J tpLglyhk;			
5.BRUSHING MY TEETH CAN PREVENT TOOTH DECAY			
gy; Jyf;Ftjpdhy; gy; brhj;ijapypUe;J ghJfhg;g[milayhk;			
6.EATING AND DRINKING SWEET THINGS DOES NOT CAUSE DECAY			
,dpg;g[rhh;e;j czt[fis cz;gjpdhy; gy; brhj;ij tuhJ			
7.USING FLUORIDE IS A GOOD WAY OF PREVENTING TOOTH DECAY			
g[nshiuL cgnahfpg;gjhy; gy; brhj;ij jLf;fg;gLk;			

19. WHERE DO YOU GET INFORMATION REGARDING ORAL HEALTH

gy; rk;ke;jg;gl; bra;jpfis v';fpUe;J bgWfpwPh;fs;

1. FRIENDS	ez;gh;fs;
2.RELATIVES	cwtpdh;fs;
3.TEACHERS	Mrphpah;fs;
4.TELEVISION	bjhiyf;fhl;rp
5.PARENTS	bgw;nwhh;fs;
6.RADIO	nuonah
7.DENTISTS	gy; kUj;Jth;fs;